

May 2, 1935

Dear Bill,

I've asked Dad to get from you some information concerning the ice plant and I hope that it won't cause you too much trouble to supply it. I've found that I'd better do a little more fundamental calculating than I had at first planned to. So therefore I've made use of the family emissary. I'll recapitulate what you have already, by the time you get this letter, been asked.

1. At what temperature do you freeze your ice?
2. How many cans have you?
3. What weight of water do you freeze in each can?
4. How many cans do you pull a day?
5. How many cans do you pull at one time?
6. How do you agitate during freezing? If you use air, under what pressure do you use it?
7. Send me all the dope which you can copy off the name plates of the compressors you have in use, either for full operation or just to keep the storage house cold. I should in particular like to know the manufacturer, serial number, rating, steam low pressure, steam high pressure, ammonia high pressure, ammonia low pressure and anything else that you can find on the name plates relating to the stroke, bore, and speed of the machines.

I hope that you are in the best of health and, in closing, I send you my best regards,

Yours truly,

Feb. 19, 1935

Mr. William Donnell
Island Service Company
Nantucket, Mass.

Dear Bill,

Just a few lines to acknowledge the receipt of the correspondence referring to the revamping of the ice plant. I haven't had a chance, as yet, to give it more than a cursory inspection and it will take me a little time to work through the material it contains. If I need any more dope I'll drop either you or Mr. Ingall a line.

The winter here seems to be at an end- this may be a premature statement, but the last few days have been very springlike. How have you people at Nantucket weathered the last months? I understand that my friend D. Runk is getting to be a permanent settler- is that so? How's the family? Mine is doing nicely- this year we seem to have had the breaks and both kids have kept very well. My classes are quite large this year, this naturally gives me more to do, and as the lab is also full of graduate students, my days aren't long enough.

Kindest regards to you and the rest of the "office".

Sincerely,

How are Florence and Billy? Have you taken any trips with the trailer since the transcontinental cruise? We went much against the advice of Dad, went in to the White Mountains for a few days around New Years. They were beautiful, deeply covered with snow so that we could indulge rather heavily in skiing. I snapped a lot of well pictures but none of them came out due, I believe, to the fact that all congealed at the low temperatures we experienced. This caused the transport mechanism to stick and in freeing it I inadvertently ripped the film so that all my snaps were on the same frame. Bad luck and also a little of Dec. 7. It really deserved far better treatment than it got. I have been frightfully busy with my regular work and on a couple of other little jobs so that I haven't had much time to give your proposition any kind of serious consideration. I am very pleased that you have approached me with your difficulties and I should be very much interested in setting up an estimation of costs for the installation and operation of various types of refrigeration set-ups.

Sincerely,

In order to make any specific calculations, I would like to have the following dope.

1. Capacity of plant- tons per day production and storage capacity. Will you want to increase or decrease this?
2. Types and capacities (ratings) of compressors and auxiliaries at present operated by steam. How old are they and what is their general condition? Shall we consider as some of the combinations, the use of the old compressors with diesel electric or steam drive or do you believe that completely new (second-hand) equipment is required.
3. How low an electric power rate can you get? How about "demand" or other services charges?
4. How much would diesel oil cost you per gal. at the ice plant? It is $5\frac{1}{2}$ cents here.
5. How many tons of screenings do you burn per operating day? Do you charge the ice plant for the coal used? This was, I believe, the paramount advantage of the steam plant, nicht wahr?
6. What is the capacity of the present boilers? Do you use steam from them for outside power or heating? If so, how much and during what seasons?
7. How much electricity do you use, at present, for light and power? During the summer? during the winter? Would you consider it advisable or desirable to generate any or all of it yourself?
8. Could you send me a transcript of the present income from and operating costs of (including book-keeping charges against) the ice plant?

With this dope, I can start calculating. If anything else turns up I can always get in touch with you. I don't want to dangle any plums in front of your nose but this might be of interest to you. I have a friend here who is operating (owns) a diesel ice plant, which they operate during the summer months, in this vicinity. Their ice costs them $2\frac{1}{2}$ dollars per ton and they use $3\frac{1}{2}$ gals of oil per ton of ice. They operate under unusually favorable conditions- but this gives us something to shoot at!

The family has all been well. No scandals. Dad plans to go to Germany soon and Lilo wants to take the kids over this summer. This sort of leaves me out in the cold- but I guess I'll get along.

How are Florence and Billy? Have you taken any trips with the trailer since the transcontinental cruise? We, much against the advice of Dad, went in to the White Mountains for a few days around New Years. They were beautiful, deeply covered with snow so that we could indulge rather heavily in skiing. I snapped a lot of swell pictures but none of them came out due, I believe, to the fact that oil congealed at the low temperatures we experienced. This caused the transport mechanism to stick and in freeing it I inadvertently ripped the film so that all my snaps were on the same frame. Bad luck- and also a bit of carelessness on my part. Mrs. Just has not as yet sent over the envelopes she was going to- so you will have to wait for your birthday present until Dad returns. I'll enclose a few extra ones of mine.

Best regards to you, Aunt Florence and the "Kids" from all of us here in Hoboken-

Sincerely,

In order to make any specific calculations, I would like to have the following data.

1. Capacity of plant- tons per day production and storage capacity. Will you want to increase or decrease this?
2. Types and capacities (ratings) of compressors and auxiliaries at present operated by steam. How old are they and what is their general condition? Shall we consider as some of the combinations, the use of the old compressors with diesel electric or steam drive or do you believe that completely new (second-hand) equipment is required?
3. How low an electric power rate can you get? How about "demand" or other service charges?
4. How much would diesel oil cost you per gal. at the ice plant? It is 5¢ cents here.
5. How many tons of screenings do you burn per operating day? Do you charge the ice plant for the coal used? This was, I believe, the paramount advantage of the steam plant, right?
6. What is the capacity of the present boilers? Do you use steam from them for outside power or heating? If so, how much and during what seasons?
7. How much electricity do you use, at present, for light and power? During the summer? During the winter? Would you consider it advisable or desirable to generate any or all of it yourself?
8. Could you send me a transcript of the present income from and operating costs of (including book-keeping charges against) the ice plant?

With this data, I can start calculating. If anything else turns up I can always get in touch with you. I don't want to dangle any pawns in front of your nose but this might be of interest to you. I have a friend here who is operating (owns) a diesel ice plant, which they operate during the summer months, in this vicinity. Their ice costs them \$4 dollars per ton and they use 3¢ cents of oil per ton of ice. They operate under unusually favorable conditions- but this gives us something to shoot at!

The family has all been well. No accidents over this summer. To Germany soon and life wants to take the kids over this summer. This sort of leaves me out in the cold- but I guess I'll get along.

1126 Armada Drive
Pasadena, California
Dec. 7 1934

Dear Al:

Bill's psycho tests came thru at last having chased us several times across the continent. They are very interesting but quite confusing. He has an objective personality which I would certainly never have guessed.

Our iceplant at Nantucket has grown to be quite a problem. Due to the invasion of electric refrigeration plus the decline of the fishing industry our volume of sales has steadily declined. Thus for several years our overheads have more than eaten up our profits. While I have been able to make several large economies in the general tightening up on waste it will not take care of the decline entirely. I find myself faced with the need of constant renewals and at any moment I feel that some of the principal machinery may have to be replaced. We had to replace the boiler tubes this fall and that is probably just the beginning of a series of replacements. Some few years ago I had Mueller make a report on the possibility of buying steam or electricity but could not get a decent rate from the local company. Killen however turned over to electric power. I have been wondering whether Diesel power, either direct or by making electricity would not be the solution. I wonder if you would not like the job of working out some solution this coming year. ? It seems to me that it ought to be possible for you to work out this winter at odd times with the data we have and check up next summer when you come down for a vacation. I want to be prepared with some sound engineering advice when the crisis comes. What do you say ?

Best regards to your family. We arrived here without any real adventures, safe & sound.

Sincerely,
O. W. Bayne

May 4, 1935

Mr. Alfred Bornemann.

Dear Al.

I have answered your questions to the best of my Knowledge and am glad to be of any assistance on this matter, no trouble as it is part of the job.

1. At what temperature do you freeze your ice ? Ans. 10-12 degrees F.

2. How many cans have you ? Ans. 432 cans

3. What weight of water do you freeze in each can? 315 lbs.

I weighed the water this morning and this is the first time that I have ever done that although my father has told me that if the water is within 9" of top of can that we would get 300 or a little more ice. The water was just within 9" of top of can.

4. How many cans do you pull a day ? Ans. 216 cans. in three shifts .

5. How many cans do you pull at one time? Ans. one can.

6. How do you agitate during freezing? Low pressure system tubes 26" long.

7. Air pressure is $1\frac{1}{2}$ lbs.

8. Ingersoll -Rand Imperial Type XPV. Right hand side # 48995 PP
Left Hand Side # 48994 PP, Steam Cyl. 18 x 14, Ammonia Cyl. 12 x 14
Steam Cylinder 11 x 14, ammonia cyl. $8\frac{1}{2}$ x 14.
I am enclosing a letter I have from I.R. Co. please return to me.

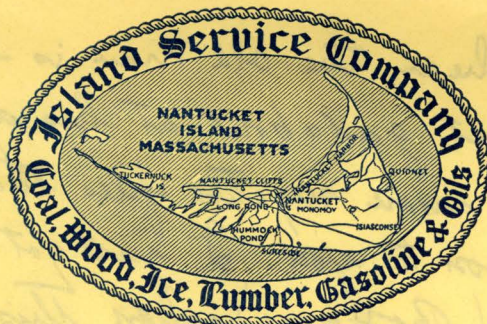
This letter is answer to some questions that I asked in reference to a quick freezing unit for fish that Bassett Jones had in mind. You may find some dope in it.

We also have a small automatic York Compressor which takes care of the ice house when the big machine isn't in operation. Size of Compressor 4 x 4 with 10 H.P.G.E. motor.

Best Regards.

Bill.

315 x 216 = 67,000 lbs of water/day.



Island Service Company, Inc.

Nantucket, Mass.

May. 1. 1935

My dear Al:

It seems an opportune time to return to the subject of the ice plant. I do not know just what data you still lack but Bill tells me he sent on a lot of dope some months ago. If you will let me know what still is lacking I will try to get it together for you. I prepared this year a carefully worked out cost study of iceplant operation. I don't know if Bill sent this on to you.

In general it seems as if we have a gradually shrinking market for ice due to electric refrigeration and the failure of the fishing industry. There is really not a market big enough for two plants. I don't believe Killen sells 25% of our sales. He revamped his plant and runs by electricity. I don't believe he makes a profit.

produced
tons screenings
a year.
34 soft coal
114 screenings

All our machinery is obsolete and near the end of its useful life. Changing from steam would destroy our market for screenings but this item has been on the decline for the last few years. Possibly a plant which would supply power and lights as well as ice would be a combination worth while. Its a thought. We hate to go out of the ice business but we cannot run at a loss indefinitely.

glad to hear the old man is home again. He's getting to be a great gadabout at his age. By the way he sent me many more negative films than I'll need. Think I will send some on to you. I just got a new Kodacolor out fit for my movie (B&H #121) when this new color film appeared on the market - stung. However I had not equipped my projector. But I have several films in color & no way to show them. And the new film does not come in sizes for my movie camera ("pockette" cartridge) stung again. Color is the only thing out here. The flowers were gorgeous this year. The only trouble with the Leica is that one has no knowledge of things going wrong with the film. I have lost several films thru minor adjustments - the end slipping out and the film not winding.

Sincerely,

O.D.D.

Island Service Company

Mr. Alfred Bornemann,
Hoboken, N.J.

Nantucket, Mass. May 9, 1935

Dear Al,-

Enclosed find a report that Mr. Ingall wanted you to read, please return as we need it for our files.

Best Regards,
Bill.

machine. The auxiliaries would be run by electricity which would be generated by a 15 to 20 K.W. generator likewise driven by a Ford 4. It would be necessary to have a reserve motor, as sixty days continuous operation would probably be the maximum obtainable before the valves would have to be reground, etc.. The changing of motors would be an easy operation, requiring perhaps an hour or two and with this in view it might be advisable to run only thirty days at a stretch. Another generating unit, perhaps somewhat smaller, would also be a good thing to have on hand. I should particularly recommend this if you wish to consider the generation of your own electricity for lighting and power. You use so little for these purposes, (outside of the ice plant) that I would hardly recommend this - especially as during the winter months you probably do not keep three shifts of engineers on the pay role.

Another arrangement would be to use a somewhat more powerful motor, say a V-8, directly connected to a generator (15 to 20 K.W.) and belt connected to the compressor. In this case a small generating unit should be held in reserve as should also an additional V-8 gasoline motor. I see that the advantage of such a set up would be a low initial cost. I'll have some actual data on that for you soon. You wouldn't need your stand-by machine as you could turn over your compressor easily enough for an hour or two a day to keep your ice house cold during the winter. This would be a very economical arrangement by means of which you might carry your lighting and power loads during the summer months while working on a three shift basis and in the winter turn that

over again to the N. G. & B. Co. This may not be feasible but perhaps something could be worked out along this line.

Another economy in labor could be effected by installing a hoist which enables an operator to pull 8 cans at a time instead of only one. The time for pulling the cans and filling them would be about twenty minutes a unit, so that one man could pull 3x 8x 8 on 92 cans a shift or about 27 tons of ice a shift. This is more than you'd require under a production schedule of 15 or 20 tons per day. Under the 15 ton schedule you could even get away with a 6 can hoist.

The use of an automobile engine for prime motive power seems most alluring to me. Your operating costs can most certainly be reduced (see below) and capital expenditures would be kept down to a minimum.

In the next paragraph I shall recalculate items 1, 2, 3 and 4 of the compilation I made on the first page of this letter. I shall assume that we burn gasoline as a fuel at 8 cents a gallon and use about 60 horsepower per hour for 200 days (the 15 ton per day schedule). I shall further assume that a 6 can hoist is installed requiring a tank man for only one shift for a period of 40 weeks (wage 25 dollars a week). Three engineers are required for the same period and I'll use Muller's figures of 10 dollars a week total for these men. I shall take no credit for ice plant electricity used for lighting or power. Item 4 will remain the same only it as well as everything else will be calculated on a basis of 13000 tons of ice made and sold. I can not tamper much with items 5 and 6, also please understand that these figures are only suggestive of the trend of

savings which would result in the change-over as outlined above. The main advantage of the plan is not the economy in operation but the cheapness of equipment.

Item 1. Labor	1.80
2 & 3. Fuel	.77
4 Oil, etc.	1.92
Total	4.49

This total is to be compared with 6.27 and I believe that the savings indicated can easily be achieved. Of course, if the large ice house "loss" is allowed to continue, the total will be about 5.40, which is not so encouraging but never-the-less something.

Your letter of June 3 arrived this morning- I have really felt badly about not getting these ideas off to you sooner but I've been over-rushed this spring, yet, in spite of all that, I have not entirely neglected your problem. Tuesday I am going out to see one of the most economically operated Diesel plants in this part of the country. It is a very ~~profitable~~ profitable business so I shall probably learn a good deal. Also I shall try to get you some cost data. I shall have a good deal of dope together by the 4th of July when I expect to come down to Nantucket for a week. See you then- if you don't drop in on me on your way there. In case we feel that a specialist is necessary I think I can get one to do a good job for about 250 dollars. This of course will be deducted, as I understand it, from his total fee if he gets the job of redesigning the plant. I have already sounded someone out so as to have him on tap if we can't swing the thing ourselves. I've also come to the conclusion that the good

savings which would be a great help to you. The main advantage of the plan is not that it will help you plan

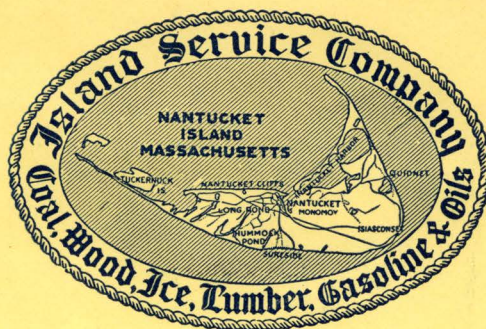
I hope that you will have a good trip home. I understand that you are coming back through Canada. Good Boy! How I envy you!!! Best regards to the kids and to yourself.

Yours,

Total 4.48

This total is to be compared with 6.27 and I believe that the savings indicated can easily be achieved. Of course, if the large ice house "loss" is allowed to continue, the total will be about 8.40, which is not so encouraging but never-the-less something.

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June 3 1935

Island Service Company, Inc.

Nantucket, Mass.

My dear Al:

Think by this time that you should have had about all the ice plant data sent on to you from Nantucket and I hope that if you have not had time to study on the problem you have been able to find some worthy young engineer who could give us some pointers. We hear a good deal about unemployment these days though I have found very little evidences of it myself. Good men seem as scarce as ever - and good common sense seems a thing of the past entirely. I had hoped to hear from you before I left but now I shall leave here the 22d. and hope to be in Nantucket by July 5th. Are you going to be there then? Some way this summer we must solve this ice problem or close down the plant for good. I can see no other answer. I hope however some of you clever technocrats can find a way out.

My regards to the family & hoping
to see you all soon -

Fig. 2

with the purchase of electricity from the N. G. & E. Co.. It might be worth while to sound them out regarding the sale of current during the off-season months for ice production. In this case you could run all winter, i.e. from the 1st of October until the 1st of June. The ice would be stored in a sufficiently large building- for 3000 tons a room of about 100,000 cu. ft. would be large enough- for the summer months and your engineers could be profitably employed as ice house men during the shut down period. This is not, in general, considered good practice- but your situation is odd and some solution like this might be the best one. This is where the one-man one-shift plant, entirely automatic in operation, might be of use, if you can get a good rate. Your labor costs will certainly be much lower than at present- I should venture an estimate of at least 50% of the present- but the initial expense would probably be large.

One other type of prime mover should be considered and that is the gasoline engine. The automobile engines are the cheapest, cost between 100 and 150 dollars apiece, and they are well made, reliable, repairs are cheap and most any mechanically minded person can run and repair one intelligently. The four cylinder engines turn out about 45 to 50 horsepower and the V-8's about 90 horsepower. The fuel consumption is approximately 10 h.p. per gallon of gasoline. One possible set up would be to buy a 40 ton compressor, and have one or two refrigeration capacity or we might be able to get away with a 30 ton machine if we scheduled a 15 ton per day output, set in the case of electricity, or the initial capital outlay parallel to your present compressor and driven by a Ford 4 cylinder motor. The drive would be by means of a V-belt and the old compressor would be there as an emergency stand-by.

many
now 78

in the first case we would require prime motive power of about 60 h.p. and in the second only 45 h. p.. These figures are quite significant- they provide you with sufficient power to make all the ice you can sell (see 1934 report), and show that you are at present decidedly over-powered and consequently must be running at a low-over all efficiency. One question, however, pops into this discussion. Bill mentioned in one of his letters that you were at one time considering going in the "quick-freezing" game. Will that proposition have to be considered at all in our calculations? I am continuing on the basis that it need not.

The use of fuel oil would involve the purchase of diesel engines as prime movers. This seems to be the most economical source of power if you consider economy on the basis of fuel consumed. A figure generally quoted in this regard is a fuel cost of 25 to 30 cents per ton of ice produced. Diesel engines are, however, expensive running anywhere from thirty to eighty dollars per horsepower depending upon whether you buy a second hand engine or a real good new one. Another feature which you must take into consideration, and one which you can judge much better than I, is the availability of a sufficiently experienced engineer to operate the diesel properly. This last is a very important matter and I doubt whether you have satisfactory men on the island.

The above three sources of power seem to have one or two things in common with-e-. Either power is very expensive, as in the case of electricity, or the initial capital outlay installed would be large as in the case of a new steam plant or a diesel plant. One idea, before we go on, in connection the old compressor stand-by

of new equipment and in view of the decreasing ice market wish to keep any capital expenditures down to a minimum. With a little thought one can foresee the possibility of these two aims conflicting with one another. So our final decision will most probably be some sort of a compromise.

As I have been unable, as yet, to get actual cost data on all the equipment we would have to consider, I shall just ramble on a bit and discuss with you the various ideas I am stewing over.

I am taking for granted that it is necessary to install new equipment throughout the whole plant. The first consideration is the choice of prime-mover or prime-motive power. Of the latter, electricity, steam, fuel oil and gasoline are the sources we have to choose from. The purchase of electricity seems to be out of the question in view of the rates that the Nantucket Gas and Electric Co. are willing to make for you. However there exist certain one-man one-shift electrical plants which have a capacity of up to fifty tons per day and it might be possible to save enough in labor to absorb the high power costs. I'm afraid though that this would involve a rather large capital outlay.

The large initial expense would also prejudice me against replacing your boilers and steam engines even if we bought machinery of only half your present capacity. This brings up the question of capacity for another one which we really should discuss together. Three thousand tons of ice can be made at the rate of twenty tons per day in 150 days or at the rate of 15 tons per day in 200 days. If we figure three horse power per ton of refrigeration (rather ice), including auxiliaries,

525 River Street

Hoboken, N. J.

June 4, 1935

Dear O. D. I.,

Since I put the family on the boat for Germany I've had a little more time to consider the I. S. Co. ice plant situation. Bill has sent me a lot of dope and I can appreciate the situation you are in much better than I could beforehand. I was particularly interested in your report of operation

costs and I have recompiled your data, as follows, in order to obtain a somewhat different picture of the situation. The costs and charges below are calculated on a ton of ice sold. Of the latter, electricity, steam, fuel oil and gasoline are the sources we have to choose from. The purchase of electric-

Item 1. Labor	2.98		
2. Coal	1.07		
3. Electricity	.09		
4. Oil, salt, water, repairs, etc.	2.13	1.09	5.23
5. Interest and depreciation	1.44	1.04	1.44
6. General Chgs.	3.75		6.67
Total			11.46

These figures are about one-sixth lower if based on a ton of ice produced - so that, of course, less store room "loss" will promote the profitable operation of the plant. The other - it above items are very interesting particularly as any economizing in items 1, 5 and 6, which constitute nearly 70% of the total is largely a matter of administrative policy or bookkeeping method and these charges are more or less fixed regardless of the mechanical efficiency of your plant. However, as I see it, regardless of the above remarks, your problem is a twofold one. First, you wish to operate as efficiently as possible and second, you anticipate the need

Island Service Company

Nantucket, Mass. June 24, 1935

Mr. Alfred Borneman

Hoboken, N.J.

Dear Al.-

1. We use salt water and well water for our cobenser, well water temperature about 58 and salt water varies as to weather ranging from 60 to 70.

2. Diesel oil costs us at the present $6\frac{1}{2}$ F.O.B. Nantucket, we shoudn't charge ourselves over 1 cent higher at the most. Gasoline about 10 cents wthout tax.

3. Dimensions of Brine tank, 60 ft. long, 21 ft. wide 5ft. deep. brine 3' 7" deep. Tank holds 432 cans.

Best Regards,
Bill.

Dear P.D.I.

I've been scrounging around getting prices - looking at 2nd hand equipment, etc. Material of this nature is very hard to collect - hard in the sense that it requires time to talk with people and to look up items of interest. I am sorry to keep you waiting for the report and recommendations I promised to send you. You know though, that I have loads of other work and I just haven't the time or organization to drive this thing through in a timely ^{firm} ~~way~~ at the rate a regular business organization could.

I am going to ~~try~~ to tabulate the various plans we discussed so that you can at one glance comprehend the situation. Before hand, I wish to recapitulate several points in connection with the acetylact and its operation upon ^{which} we had agreed.

1. The present equipment is obsolete, has given all the service which could reasonably be expected from it, and therefore no charges for it would be carried against the new

plant if you should decide to erect one.

2. The plant should have a ^{normal} daily production of 20 tons of ice. ^{The probable max. production would be 24-25 tons} The ice is to be of first class quality. This will help promote its sale.

3. The utilization of coal screenings is no longer to be a decisive factor ~~as to~~ controlling the choice of a prime mover - that is a steam engine driven compressor and auxiliaries.

4. The plant is to be of the one man type - that is, one man per shift can take care of the engines, haul the ice, refill the cans, store the ice and ~~take care of~~ ^{handle} ~~some~~ incidental sales.

5. The possibility of manufacturing some or all of the electrical power required by the I.S. Co is to be considered.

~~no from this point no can proceed~~

Of the four types of prime movers ~~available~~
mentioned in my letter of June 4 only
~~two~~ had better be will be considered
in the following analysis. Steam power
is out of the discussion due ~~to the fact~~ ^{to}
~~the~~ ^{the} inherent inelasticity of operation
associated with steam plants, high labor
costs. (probably two men would have to be in
attendance ^{during at least 2 of the} ~~for all~~ shifts) and large initial
expense. Gasoline engines of the automobile
type would not ~~operate~~ ^{perform} satisfactorily if
operated at any where near full load
for any long period of time. Other gasoline
engines have nothing to recommend ^{them} ~~they~~
in preference to Diesel engines and
have the disadvantage of requiring a
more expensive fuel. Therefore the use
of purchased electric power or diesel
engines to operate the plant will
be the only sources of power ~~discussed~~ ^{considered}
in the following outline.

Type of
wire

Electric
wire

Cat
wire

Steel
wire

Galv
wire

Seg of Eble
specimen

Western gate

Genesta

At Valley center

Starting land

High side

Compressor 8x8

Condenser

Ammonia oil etc

Ammonia return

Pump

High side

Evaporator coils

Refrigerator

Refrigerator

Refrigerator

Refrigerator

Refrigerator

Refrigerator

Refrigerator

Refrigerator

40 WH

37 WH

37 WH

75 KW 177 460

80 hp

6400 2400

107 hp

8000, 3000

20 KW

507

200

33 WH

875 350

200

200

200 200

2400

1000

2400 1000

2400 1000

10,500 10,500

10,500 10,500

10,500 10,500

Exp. cont.	14,400	12,150	20,000	14,300	22,275	15,350
Building + contingencies	5000	5100	5000	5000	5000	5000
Exp. cont.	19,400	17,150	25,000	19,300	27,275	20,350

Probable Cost of Ice/ton Annual Sale 30000

Ice 3000/ton	1.04	1.04	1.04	1.04	1.04	1.10
Freight 35.00	1.57	1.57	1.35	1.35	1.35	35
Insurance + other	.75	.75	1.00	1.00	1.00	1.00
Oil etc	.91	.91	1.33	1.03	1.45	1.08
Profit	4.40	4.27	3.72	3.42	3.84	3.47
						6.67

979
816

1.375

$$25 \times 2.5 + \frac{12 \times 50}{3000} = 1.57$$

1.375
25 hrs
24/10
cost
demand
day
from

Electric power

Sub- 3000 tons

3000 \times $\frac{1}{20}$ = 150 days operation

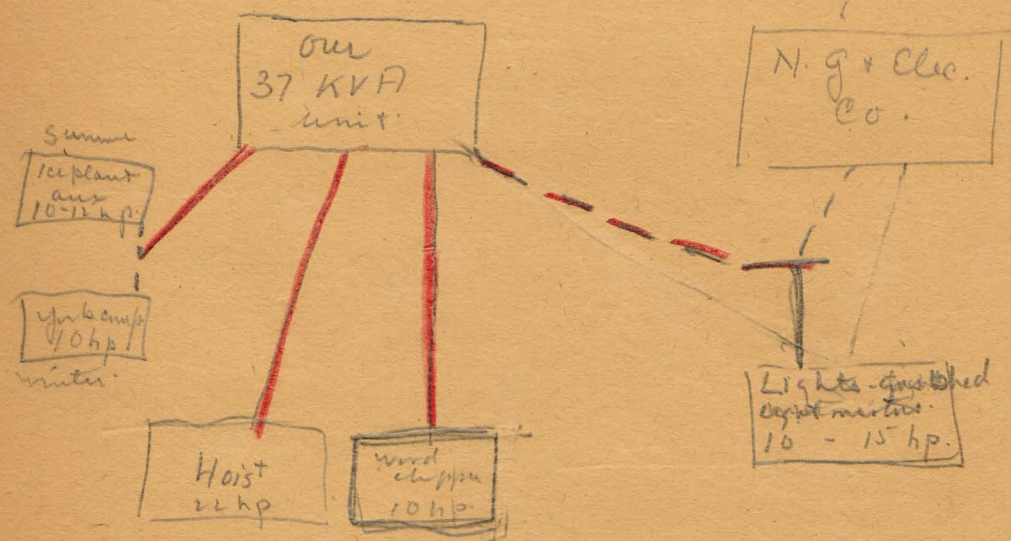
50 days repair

$$\frac{200}{200} \times \frac{1}{7} \times 110 \pm \frac{1}{3000} = 1.04$$

$$164 \times \frac{1}{4} \times 35 = 820$$

} for coal
} for elect.
} Generator.

Under these conditions and ^{referring to the} making reference to the charted demand it seems impractical to run a generating plant during hours when the load is very small - particularly for three shifts throughout the whole year. However it might be feasible to split our circuits as indicated in the following diagram



According to this plan we should need two distributing circuits, the red one a purely internal circuit and the red and black dashed one supplying the 24 hr./day load which can be either connected to the N. G. & Elec.

Co's supply or own own generating
system. ~~while making ice~~ ^{on the summer} it would
probably be possible to supply ourselves
with all the power we require the
five month period of operation. ^{with the help of} ~~if~~
we should have to unload coal during
the summer months - ~~we could not~~ ^{should}
~~use the ice chopper~~ the work would
have to be planned so that the second chopper
lays idle during this period. If still
the drain is too large on our power
making equipment we could always
turn over our lights and gas shed and
small coal handling ~~into~~ ^{to the} N. G. & C. Co.
This would relieve one system during
the hasting period. without
impairing any of the service
~~we~~ needed. ~~On other~~ ^{Shanty} started
the work would have to be
mightily laid out so that the power
requirements do not exceed the
capacity of the generating equipment.
The only time when difficulty
might be anticipated during the
summer months would be during

8 x 24 x 150 = 28,800. PW -

the unloading of a coal barge. This occurs, I understand once or, at the most, twice during the summer.

During ~~the winter months~~ ^{the months} that the ice plant is idle, the day load may vary ^{up to 33} a great deal and the night load is ~~relatively~~ ^{very} small, just up to 3 kw. Bear in mind that the average hourly energy consumption for light & heat ~~throughout~~ ^{throughout} the whole year is 1.25 kw per hour & a discussion of the load is interesting.

The 4x4 compressor needs to run no more than three or four hours.

A 10 h.p. motor drives it. Woodchipping could ~~be done~~ ^{be done} during those hours and the rest of the staff also supplied with current for the 33-kv. D.

Generator. If the coal hoist is to be operated care must ^{be exercised} ^{4x4 at the same time} not to run the woodchopper. And if that is necessary the rest of the ~~plant~~ generator can not in addition carry the lights & incidental motors there.

may be connected on to the Nan-jay
 Elec. Co's supply. It would only seem
 practical to generate our own current
 during the whole day while hoisting coal
 and perhaps for a half a day (4 hrs)
 running our mine according to the
 rest of the time. The generator
 during this period would be driven
 by a small gasoline engine (3-4 hp)
 42 h.p. Wolvinn) or by a small diesel
 brought especially for the purpose.

The cost of ~~operating~~ ^{power generated} in this fashion
~~would be~~ compared with bought power
 would be -

	Expenses Diesel	Diesel generator	gas motor
24 hrs up on additional investment 7 = 1000	160	160	
Engineer	420		420
1 x 1/2 x 24 x 35	400		400
Fuel - 7 x 4 x 6 x 24 x 10 gas			

Parent arrangement

Dist & dup. m.
addition of parent

Empire

$1 \times \frac{1}{2} \times 24 \times 35$

in day week & night

Final.

Pl & repairs
absorbed by
the plant.

Electric bell

Stand by light. 160

Power light. 960

$\$ 1120$

$$42 \times 5 \times \frac{1}{8} \times \frac{1}{8} \times .66 \times .4 \times 6 \times 24$$

114

420

420

160

160

Self generation
Dinner

gasoline

160

350

$\$ 1204$

11490

1 x 20 x 100

In order to complete this analysis we should include the present cost of electrical power and the probable cost of generating a large proportion of our own power.

There is about 55 connected horsepower, ^{about the plant} at present, ^{accepting} a demand upon the N. G. & E. Co. The average, ^{present} ^{hourly} power demand ^{is}

$$\frac{\text{Total KW}}{\text{hours/year}} = \frac{10,993}{365 \times 24} = 1.25 \text{ KW/hr, which}$$

Through it would be too expensive to supply such

you can see is very small. The additional load due to electric auxiliaries, to be installed in the new ice plant, will be between 6-12 KW per hour.

during the period of operation of the plant. Say the avg. load due to auxiliaries is 8 KW/hr. at 5¢ per

$$\text{KW hr} \quad 8 \times 24 \times 1.50 \times .05 = 1,440 \text{ roughly}$$

With these figures there is no question concerning the advisability of generating

your own electric power for ice plant needs, providing you decide on

a Diesel Engine as a power source.

These figures are pretty rough

The investment might be figured
as anywhere from 1000 to 5000
dollars, depending 1st upon the value
you set upon equipment on hand,
2nd the type of new equipment bought
and 3rd the extent to which you
wish to relieve the capital current
must be credited to the ice plant.

The calorific value is legitimate -
but if it isn't absorbed here
must be somewhere else -
Fuel cost are high - particularly for the
gasoline engine - they depend largely
upon the ops of full load at which
the generator operates. The present
bills are based on the actual ones for
1934 and the calculated bills based
on the assumption that we use 300 kW
hrs per month for 7 months - this
is your present lighting load for
this period - and that we purchase
this according to "Rate 3." The

availability of this rate for light
and power loads must be inquired
about. It is a frightful rate
but to work under rate 3 and
4, as at present, would be very
impractical when you consider
the small amount of power
which will be bought if we
follow the suggestions I've
~~determined~~ outlined.

Now for recommendations. - Plan IV
seems to give us the cheapest ~~cost~~, and
Plan V ^{with some} if you wish to take over
chance on the the generation of
your own power. Of course we
could buy the 100 h.p. diesel and
37 K.V.A generator. the ^{addition} initial expense
especially with second hand equip-
ment would ~~not~~ ^{is not} be a great deal

The electrical plant, I should not
recommend unless Mother can

give you a rate of around 1.5¢ per kWh
with this 1 per H.P. demand charge -

For ^{consumption} ~~charging~~ purposes - Our ~~demand~~ ^{much} ~~consumption~~
would be a little but not ^{much} larger than
Villiers. ^{1 1/2} It would be 24 hr load and not a 10 hr one.
He has, by the way, an 8x8

de la Vergne compressor - the same size
we should install - driven by a 75 H.P.
motor. I found out that the plant
is run 10 hrs per day. He pulls his
time temperature way down ^{during this period} ~~this way~~ -
circulates it, during the ^{rest of the day} ~~night~~. its
temperature rises, and then the
next morning the cycle is repeated.

With the electrical price ^{more than}
~~became~~ ~~and~~ ~~that~~ ~~much~~ ~~can~~ ~~come~~ ~~down~~ ~~to~~ 1.5¢,
elementated, we have only to choose
between men and used equipment.

Rott. Kihre - 1 E. 42nd St. is a very reliable
dealer, by reputation - and ^{impressions} and he
has a compressor and diesel which we
could use. Stephen Hall - also of the best
~~highest~~ reputation - would be the most
desirable source for generator, switch board
and voltage regulator. He is located in Hoboken
and I went to school with his son in
Montclair. ^{I where I would hope to buy for either of these firms.}
The rest of the equipment
should be new with the portable exception

of the tank which can probably be cut down
to a smaller size. General costs are
listed in the first table. Trick is
grouping them so that they will
be more valuable to us and I should
hear from them the end of this week.
Mr. K. has also been away so I
have only approximate costs on second
hand equipment. Finish details after
the 1st of August. I believe, however,
that the data I've given you
is now sufficiently complete
so that you can decide, whether
the investment will be justified,
I believe ~~it will~~ ^{that the cost figures shown will} and whether or
not you care to generate ^{provision}
for generating, ^{a large portion of your} ^{requirements} ~~your~~ ^{the}
latter is a difficult thing to
decide and I believe will have
to be ^{based} ~~settled~~ on extenuating circumstances
rather than on ~~direct saving of money~~ ^{the decision} that
we can produce current cheaper
than we can buy it. All things
considered I do not believe we can

If you could send me a blue print of
the original installation it would be
very helpful. We shall probably
use the S end of the tank and
put the machinery in the north
end of the tank some — If you
can send these, ^{dimensions & plans} to me I can
~~draw~~ ^{draw up} some tentative plans
and also make some suggestion
as to the way in which the
disinfecting of the old plant and the
installation of the new, ^{we} might
proceed.

This has been mere action of a
recapitulation of the material we
discussed at Nantucket. If upon
receiving detailed prices on these items
we should have to purchase and
important revision of the figures is
necessary. I shall inform you of the
fact. The revision would probably
be downwards, in any case.

Sorry the letter is not typed but I have
not time to type it. I have kept a

I admit
although there are factors which would
recommend the installation of the
generating capacity and its use and
have outlined.

For the outlay of the plant there
are certain dimensions I require -

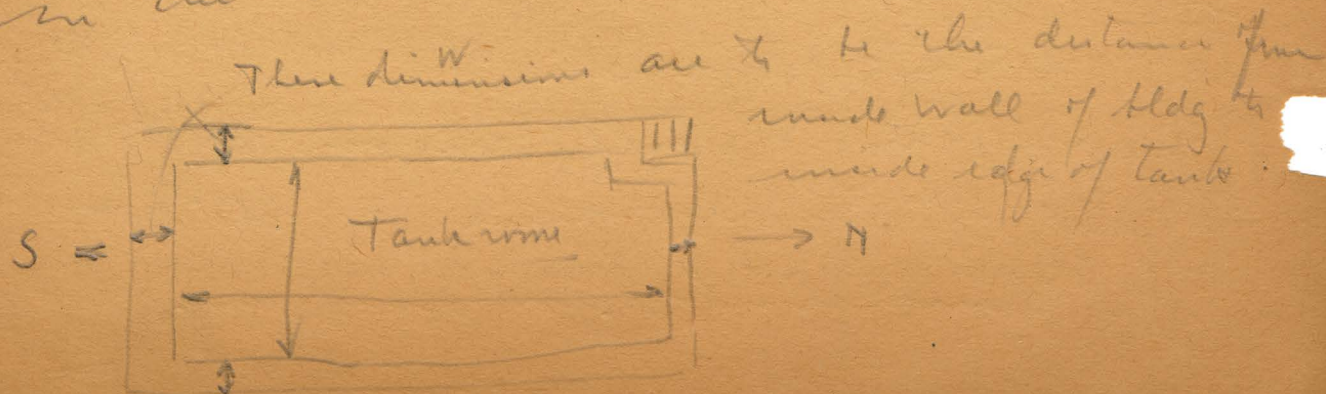
1. ~~st~~ Overall dimensions of present c.

2. size of crane I beams and their distance
apart from each other.



Be sure to give not only size of web
and flanges but also the thickness of
their portion of the I beams.

3. The location of the present tank
in the tank room and its depth -



Island Service Company

Nantucket, Mass.

Sept 12 1929 Bill of Hatheway Mch Co
25 Elm St.
New Bedford, Mass.

Aug 29. 42 HP Wob. Gas Engine #
without propeller - net - 2424.00

Only numbers - are cylinder head
Probably parts numbers Base.

36 E 3 - 6	
27 E	27 E
105-1	1039-1

Captain says burns about
7 gals gas an hour.

$$\frac{7 \times 4 \times 2 \times .72}{42} = .96$$

ch/Hph

Teams - $4\frac{1}{2}$ routes

Mon 16 tons approximately -

T 7

W 13

T 6

F 11

S 16

Su 2

Approximately

This teams only - also fishing trade
platform + Sconset wholesale.

FLORENCE ELIZABETH INGALL
NORTH LIBERTY STREET
NANTUCKET ISLAND
MASSACHUSETTS

July 31, 1935

Dear Al:

Thanks for the report. I have not had ~~some~~ time to more than glance over it. However it looks none too cheerful. I agree that the item of \$1 for repairs, etc. seems large. Also I think the electricity mfg. idea is out - it is not logical to have two plants so close together. I eagerly await the Frick figures. I thought they claimed ice could be made for 2[¢] including interest & depreciation, against \$3.42 your lowest. Where did you get that figure of \$5000 for installation. I was stuck on an estimate for it. 3000 tons is too high for yrs. sales. With descending demand \$2000 tons is enough for average. Do your figures include a new tank. I am told ours is in good shape. More anon.

O.T.

FLORENCE ELIZABETH INGALL
NORTH LIBERTY STREET
NANTUCKET ISLAND
MASSACHUSETTS

Cost of chemicals etc. 1934

Oil	265.44
Water	600.00
Am.	109.65
Salt	42.00
Gas-ker.	37.60
Misc.	89.24
	<u>1141.93</u>
3200	
	35¢ ton

Five yr. av. of repairs

1289.43

say

3200)1300

40¢

Should be lower for
new plant.

75¢ against yr. \$1.00

FLORENCE ELIZABETH INGALL
NORTH LIBERTY STREET
NANTUCKET ISLAND
MASSACHUSETTS

If they could be worked out I
would like some figures on
approximate cost of refrigerating
ice house based on area coils
And same cost with 3" or so
of ice on coils —

CLASS OF SERVICE

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WESTERN UNION (54)

R. B. WHITE
PRESIDENT

NEWCOMB CARLTON
CHAIRMAN OF THE BOARD

J. C. WILLEVER
FIRST VICE-PRESIDENT

SIGNS

DL = Day Letter

NM = Night Message

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LC = Deferred Cable

NLT = Cable Night Letter

Ship Radiogram

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Received at 46 Newark St., Hoboken, N. J.

1935 AUG 13 PM 12 55

NAE100 7=NANTUCKET MASS 13 1230P

DR ALFRED BORNEMAN=

STEVENS INSTITUTE HN=

MINUTES IN TRANSIT

FULL-RATE

DAY LETTER

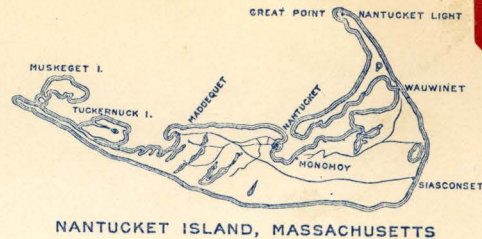
LETTER RECEIVED BRING MOELLER ALONG ARRANGEMENTS SATISFACTORY

JO D INGALL.

for business as they say lets see what they have to offer.

("unloader")

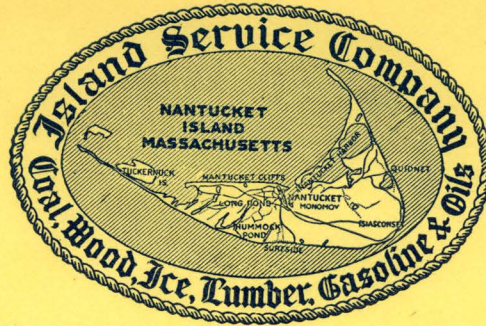
There is more to the problem of the brine ~~condenser~~^{propellor} than a mere changing of pulleys. It seems the compressed air (for hoist) builds up + then has an automatic by-pass. When it lets go the engine races for a few minutes until the governor takes hold & this would happen anyway. Ascan suggests setting the safety valve lighter to catch this before the unloader lets go but I don't know that this would help much. The safety valve on the air line is now in the engine room and when it lets go sprays the surroundings with water. Seems as if there should be something to unload water out of our air system but I don't know what.
O.P.I.



Aug 7. 1935

Dear Al:

I have about decided to drop the idea of a new ice plant. Your figures would mean a big investment and not much margin. I will try and keep the present plant running a bit longer. However our condenser is about shot & I am scared at its present status on the roof. I would like price on a new upright condenser and if we could get a second hand one that was almost new perhaps would consider that. Now get your friend to get busy + send us dope on this. I can't stay here so many more months so I must have action. If folks are as hungry



Island Service Company, Inc.

Nantucket, Mass.

September 19, 1935.

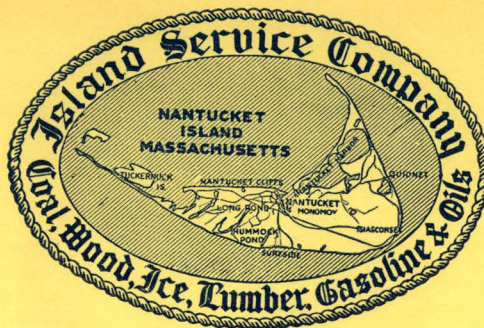
Dr. Alfred Bormemann,
Stevens Institute of Technology,
Hoboken, New Jersey.

Dear Al:

I am in receipt of your long letter and the blue print of the proposed lay out. I am afraid that your allowance for erection is much too small. I note also that in Item 3 of the list, you have a half ton electric hoist. Will this be big enough to handle four cans weighing 300 lbs., which is our final goal in the matter of hoisting? The bright idea of the can dump, as shown, I had already worked out and decided upon, however I am afraid that the curved shoot would not be as efficient as some kind of endless chain carrier. However this is a minor matter. Another point, in regard to the house, it takes about three men at present to stack ice on the top tiers. It would look as if we would have to get some kind of an elevator, which unfortunately is another item of considerable expense.

In regard to the lay out of the machinery, the first thing that strikes me is that we will have to make an expensive shift of our 4 ton machinery. I had also hoped, as I told you when you were here, to be able to keep a passage along the south end of the engine room for a possible future slide, by which to take ice to a possible future ice storage. It would be practically impossible to exhaust the engines into our neighbors property. As I have already mentioned, our building is practically on the line, however, we may be able to go straight up and then straight over the present border to the "smoke box" and exhaust into that. Otherwise I presume the set up is according to the best practice,

in boiler



Island Service Company, Inc.

Nantucket, Mass.

-2-

9/19/35.

although I am not an engineer and must rely on your knowledge.

I will be very glad to see the man you are sending down as I wish to get this matter settled soon and get away myself by October 1st at the latest.

Sincerely,

ODI:T

Got the following telegram from Babylon
Sounds as if he has some preconceived prejudice.

"Arrive Sunday early boat wife along to see town & find out about living conditions & costs
Not too pleased with moving out there
Have to return same day as I can't afford to lose time & wages from present position"

I am not too pleased at the tone of this but will meet him.

September 19, 1935

Dear Ossy,

Enclosed is a letter from Kehoe which I received this morning. It is self-explanatory and enclosed with it was ample evidence of the "excitement" he has told me about several times during the past week. I personally do not believe that he would try to rush us into making a decision if it weren't to our own advantage. After considerable difficulty, I reached him on the telephone to ask him about the implications of his letter. He was a little perturbed over the possible effect of his letter and reassured me that he did not expect any of these other sales to materialize within the next few days and, on his own accord, promised to let me know if he has a chance to make a definite sale so that we could get our oars in first if it concerns any of the engines we would be particularly interested in.

There is no sense in getting panicky about buying equipment however, we mustn't be too sure of ourselves. There probably is a very limited supply of the type of second hand equipment we are after. Kehoe seems to have most of it cornered. He is, I feel, quite reliable but Frank Moelter and I would carefully inspect the machines which we are interested in, if of course you are ready to go ahead. We should also obtain some sort of a statement from Kehoe as to the extent to which he will be responsible in this deal.

I hope, by this time, that H. J. Babylon has had a chance to see you. When he was here I told him that, if he heard from me, he should be sure to arrange to go down to Nantucket during this week. I also wired him to go as soon as possible. In my opinion the job seemed to fit him like a glove. I am anxious to hear what your reactions to his qualifications and personality are. While on this subject Kehoe paid him eleven dollars and twenty cents to recompense him for his carfare from Providence to here. Will you reimburse Kehoe for this or shall I?

This is all for the time being. Did you get the layout from Moelter? Probably hear from you soon- Best regards,

Sept. 26, 1935

Mr. W. L. Mather
Nantucket Gas & Electric Company
Nantucket, Mass.

10 Federal St. 573

Dear Mr. Mather;

As you requested, last July, I am sending you the approximate figures on current consumption for a proposed electric ice plant to replace the present one now operated by the Island Service Company. If we used an electric prime mover we should require about 180,000 KW per ice making season. The season would last about 150 days so that, for this period, our daily ~~consum~~ consumption would be about 1,200 KW hrs.

The rate you offer us will have to stand in competition to a diesel operated plant and I really hope that you will be able to offer us a low enough rate, demand charges also taken into consideration, so that it will be feasible for us to install electric prime movers.

Mr. Ingall has requested me to ask you to give this matter your serious and prompt consideration and I am therefore planing to call you, by telephone, Saturday morning, Sept. 28th, around 10 o'clock to talk this matter over with you. In case you have not been able to come to a conclusion in this matter by this time, kindly telegraph me when it would be convenient for you to have me call.

With kindest regards,

Very truly yours,

(Alfred Bornemann)

7-10- keep *MF*

ICE MANUFACTURING RATE #9

AVAILABILITY

Available to customers with 50 KW minimum connected load, ice making only with synchronous motor drive capable of operating leading power factor for main compressor units to keep between 95% leading and 95% lagging. Energy may be used for lighting not exceeding 5% of total kilowatt hour consumption of the ice plant.

RATE

Energy Charge - 2.5¢ per kilowatt hour

Demand Charge - \$1.00 per month per KW

DETERMINATION OF DEMAND

By measurement 15 minute interval monthly but not less than the highest demand so determined in preceding eleven months, nor less than 40 KW.

MINIMUM CHARGE

The Demand Charge.

CONTRACT PERIOD

One Year.

ISSUED BY
W.L.Mather, Mgr.
12 Federal St.,
Nantucket, Massachusetts

weight per horsepower of the DeLaVergne. This is a very decided advantage in stationary engines and should be particularly considered as we are buying second hand machines.

I hope that after you have read this last page and poured over the other material I have send you regarding the choice of engines for installation in the ice plant you will be in agreement with us.

I wrote Mather, as you suggested, and have enclosed a copy of the letter. I spoke with him over the telephone this morning and besides repeating what I had written told him that a two cent rate was not low enough for us and that we could only consider the installation of electric equipment if the net cost of power came to one and one-half cents per kilowatt hour consumed. He seemed glad that we were willing to talk turkey with him and promised to let me know ~~Wednesday~~ Monday afternoon whether or not they could supply us at that price. What do you think our chances will be of getting this rate? With it, I believe that we can seriously consider the electric set-up.

I don't believe that we need worry about the noise nuisance. I went out to the Garfield plant of Kehoe's Wednesday, beyond 266 feet from the plant you couldn't hear a thing, and they have very cheap mufflers. Right next to the mufflers the noise, ~~more or less~~ deadened, low pitch one. The most noise came from the engine room, and that only because the door was open. There was only a slight wisp of smoke in the exhaust.

Kehoe's letter regarding flapper doors is also enclosed. Moelter tells me that a 5 tier elevator would cost between \$650 and \$700 dollars, f.o.b. Hudson, N. Y..

I think I staightened out the question you had regarding the half-ten hoist over the telephone.

Upon thinking over the placement of the machines, it seems to me that it might be advisable to put the diesels, compressor, generator and condensers in the north half of the engine room and leave the south half for the 4 by 4 machine and auxillaries. This would bring the exhaust nearer the middle of our property. Also, it would leave the south wall perfectly free for a future ice chute. I think it will be easy enough for you to visulize this rearrangement.

Lilo and the kids came home Thursday. Did they look good to me? They had a swell summer and all look healthy and husky. Lilo asked to be remembered and sent her best regards. Dad and Mother arrived intime and, of coarse, were in their element again- all the joy and no responsibilities!

Keep well and hope to see you soon - Dad said you'd be down before you went west.

Sincerely
al.

September 28, 1935

Dear Ossy,

In reply to your last letter and telephone call I've gathered together the following information. First regarding the choice of the type of diesel engine. I spoke with Moelter, Kehoe and the Atlas people regarding this matter. Moelter's and Kehoe's answers are attached as is also the proposal of the Atlas people. In view of the fact that we had agreed to re-design your plant so as to be able to expand it's capacity to 35 tons per day, if we should in the future desire, it seems foolish to have a generator driven by the same engine as your compressor. The amount of power required by your auxiliaries will be about the same, i.e. for a 20 or 35 ton daily production. However, for the sake of operating flexibility we should distribute the refrigerating load between two compressors- one of 20 ton capacity and the other of 15 ton capacity. You could use one engine for the job but you would sacrifice flexibility in operation by so doing. Suppose you do decide to put in a 100 h. p. unit, as a prime mover for both the generator and compressor (20 ton capacity), and later it becomes expedient to install additional capacity. What are your plans- to buy another generator for your new compressor or to buy two engines, one for the compressor and one for the generator? Besides this slant to the question there is ~~the~~ an obvious advantage in handling the parts of a small engine when the engines are to be reconditioned or repaired. Both Kehoe and Moelter are quite outspoken regarding the set up we have suggested and their judgment is certainly based upon a rich experience. The Atlas people, on the other hand, would try to sell you two complete units- maintaining that the extra engine ~~costs~~ costs more than the second generator. This may be true for new, high speed equipment- but we are not buying new engines nor do we recommend the light, high speed engines.

This brings up the second question regarding engines. Atlas claim that they have no rebuilt machines with a factory guarantee at present available. Kehoe has one or two of these machines on tap but you can read for yourself what he has to say concerning them. I have enclosed the circular describing the DeLaVergne engine so that you can compare the machines we propose with the Atlas, which is typical of the high speed, multi-cylinder type of engine. Kindly note the following comparisons-

	Atlas	DeLaVergne
Wgt./HP	223#	over 400#
Fuel Consumption, #/BHP/hr.	.42 ~ 4/4 load	.41
	.44 ~ 3/4 "	.41
	.49 ~ 1/2 "	.43

The fuel consumed is certainly no disadvantage to the DeLaVergne concerning oil wasted, I have no data- however with a reclaimed that is not a very important item. Please note the much greater

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WESTERN UNION (46).

R. B. WHITE
PRESIDENT

NEWCOMB CARLTON
CHAIRMAN OF THE BOARD

J. C. WILLEVER
FIRST VICE-PRESIDENT

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Received at 46 Newark St., Hoboken. N. J.

1935 OCT 1 AM 9 48

NBA14 42 DL XC=NANTUCKET MASS 1 905A

DR ALFRED BORNEMANN=

STEVENS INSTITUTE HN=

MINUTES IN TRANSIT

FULL-RATE	DAY LETTER

RETURNED YESTERDAY LETTERS RECEIVED MATHER PROPOSITION LOOKS
BEST EVEN IF SLIGHTLY MORE EXPENSIVE TO RUN OTHER FAVORABLE
FACTORS MAKE UP DIFFERENCE SUGGEST PURSUE THIS LINE AND DROP
OTHERS ANXIOUS TO COME TO SOLUTION THIS WEEK USE WIRE AND
PHONE FREELY OUR EXPENSE=

OSWALD.

XC

No other Telegraph
office where
this message originated

ONLY WESTERN UNION
can carry your message there by
TELEGRAPH. *Quickly, accurately*

4103

818 Frueh

75 H.P.

1600

+ rest end -

1.25 -

~~450~~

1.50

60000

180,000 1941

September, 30, 1935

Dear Ossy,

I received the following telegram from Mather this morning.

Island Service Company one point seventy five cents per KWH off peak including demand charge stop if necessary wire me time to call you

W L Mather Nantucket Gas and Elec Co.

This would make our fuel bill, at its best, about ninety cents per ton of ice manufactured. This is at least fifty-five cents per ton more than we can reasonably anticipate with diesel oil at its present price. The initial cost of equipment would be about fifteen hundred to two thousand less if we should electrify. Also we might be able to get along with somewhat cheaper labor. However in spite of all these things- if you are anxious to save money and make good ice cheaply your best bet would seem to be the diesel installation and I should recommend going on with the plans we have laid.

The Atlas people, if I recall properly, have a comparison in their folder between the operating costs of a diesel plant and an electric one of similar capacity obtaining a rate of 1.7 cents per KWH. Look it over the advantages are decidedly with the diesel plant.

I shall inform Mather, probably by telegraph ~~tomorrow~~ tomorrow, that the rate he proposes is unacceptable to us and that we must be assured of a 1.5 cent maximum before we can even consider installing electric prime movers. Maybe you can get him down to this figure- it certainly wouldn't harm to attack him from all sides. We shall see what we shall see- in any case nothing attempted, nothing gained.

This is all the news for the present-

Sincerely,

On second thought have sent Mather the following night letter-

one point seventyfive cent rate unacceptable stop before recommending electric power must be assured one point fifty cents per KWH off peak including demand charge stop can you possibly give us this stop available for telephone call morning october first.

alfred bornemann

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

1201-S

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable sign above or preceding the address.

WESTERN UNION (07).

R. B. WHITE
PRESIDENT

NEWCOMB CARLTON
CHAIRMAN OF THE BOARD

J. C. WILLEVER
FIRST VICE-PRESIDENT

SIGNS

DL = Day Letter

NM = Night Message

NL = Night Letter

LC = Deferred Cable

NLT = Cable Night Letter

Ship Radiogram

The filing time as shown in the date line on full-rate telegrams and day letters, and the time of receipt at destination as shown on all messages, is STANDARD TIME.

Received at 46 Newark St., Hoboken, N. J.

NBA30 29 5 EXTRA=NANTUCKET MASS 30 842A

ALFRED BORNEMAN, DEPT OF CHEMISTRY=

STEVENS INST OF TECH HN=

MINUTES IN TRANSIT

FULL-RATE

DAY LETTER

ISLAND SERVICE COMPANY ONE POINT SEVENTY FIVE CENTS PER KWH
OFF PEAK INCLUDING DEMAND CHARGE STOP IF NECESSARY WIRE ME
TIME TO CALL YOU=

W L MATHER NANTUCKET GAS AND ELEC CO.

see over

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

W. L. Mather Manhattan Gas & Electric Co -

One point seventy five cent rate
unacceptable stop before recommending
~~use of~~ electric power must be assured
of one point fifty cents per KWH
off peak including demand charge stops.
can you possibly ^{give us} ~~guarantee~~ this stop available
for telephone call ^{guarantee} ~~immediately~~ October first.

Alfred Brunnemann

Nantucket Gas and Electric Company

NANTUCKET, MASS.

October 1, 1935

Dr. Alfred Bornemann
Department of Chemistry
Stevens Institute of Technology
Hoboken, New Jersey

Dear Dr. Bornemann:

I am enclosing tentative rate schedule for your comment and approval.

Judging by the figures you send in your letter of September 26 you are planning on a 20 ton plant. On this basis I figure the demand charge to be \$720.00 per year based on 65 horsepower main compressor and 15 horsepower auxiliaries, making 60 kilowatts of demand. The On Peak demand would be 15 horsepower, or 11 kilowatts, or \$49.50 annual charge. The annual energy charge would be \$2,400.00, making a total for the Ice Plant of \$3,169.50. This covers the Ice Plant.

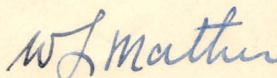
The use of electricity last year in the rest of the plant was 10,000 kilowatts at a cost of \$1,200.00. A saving of \$450.00 can be made using the tentative rate as a basis. The demand charge of 25 kilowatts, or 33 horsepower at \$300.00 per year and On Peak use of 10 kilowatts at a cost of \$45.00 per year which should give ample leeway and has been checked over with Mr. Donnell. The energy charge based on the 1st step at .02 would be \$200.00, making a total of \$545.00. There is a \$100.00 leeway in your favor.

I think it advisable to use a 2300 volt synchronous motor. Will it be your responsibility to lay out the electrical work? I will be glad to supply any additional information you may need.

Thanking you for your consideration. With kindest regards.

Very truly yours,

NANTUCKET GAS AND ELECTRIC COMPANY



W. L. Mather
Manager

WLM:HT
Encl.

Availability

Available for all purposes where customer provides transforming equipment, contracts for not less than 25 kilowatts of Maximum Demand, and agrees not to exceed either the Maximum Demand or the On Peak Demand contracted for.

Character of Service

Alternating current, 60 cycle, 2300 volts, three phase.

Rate

Demand Charge

\$1.00 per month per kilowatt of Maximum Demand
PLUS

\$1.50 per month per kilowatt of On Peak Demand
PLUS

Energy Charge

.02 per K.W.H. for the first 12,000 K.W.H. per month
.01 " " " all over 12,000 " " "

Determination of Demand

The Maximum Demand shall be taken as the highest 15 minute average during the month, but not less than the Maximum Demand contracted for.

The On Peak Demand shall be taken as the highest 15 minute average demand during the Peak hours on any day during the month, but not less than the On Peak Demand contracted for.

On Peak Hours

June 15 to July 31, inclusive
From 8 P.M. to 10.30 P.M. Daylight Saving Time

August 1 to September 15, Inclusive
from 7.30 P.M. to 10.30 P.M. Daylight Saving Time

Minimum Charge

The Demand Charge

Terms of Payment

Net Cash

Term of Contract

One year, and thereafter, unless terminated on 30 day's written notice.

Mathew telephoned 10/1/35 P.M.

1.75 cents per kWh week before

offered to save us \$450 on elec. bill.

or as to bring effective rate down
to 1.50 -

Will also come to New York if
necessary.

October 4, 1935

Mr. W. L. Mather, Manager
Nantucket Gas and Electric Company
Nantucket, Mass.

Dear Mr. Mather,

I should like to acknowledge the receipt of the tentative rate schedule you propose to offer the Island Service Company if we install an electrified ice plant. The rates you have offered us make it feasible to operate an electric ice plant economically and I am pleased to inform you that I shall recommend to Mr. Ingalls that he give such an installation his serious consideration.

There are however several minor questions I should like to ask regarding the rate and its future application. I assume from your letter and the paragraph "Availability" that the whole Island Service Company, new ice plant and present existing electrical equipment, can be put on one meter which will be connected in on the 2300 volt supply. Is this assumption correct?

Also, under the capital "Availability", will you object or penalize us if we exceed the maximum Demand for which we contract provided we do not exceed the On Peak Demand for which we contract. Don't you think that the words "either the Maximum Demand or" ought to be left out of that paragraph? I suppose I am right in assuming that it is your desire to sell us current during all hours except during the "On Peak" period.

you
The ice plant load as ~~we~~ have calculated it is substantially that which we anticipate. However we have to have an eye on the future, what would be the leeway, above and below the yearly power consumption I indicated, we would have and still have this rate available to us? Is this question clear to you. I shall restate it. Would the rate you proposed still be available to us if our yearly power consumption, still mostly ice making load, went down to 100,000 KWH or up to 400,000 KWH?

We shall, of course, use a synchronous motor to drive the compressor and induction motors for the auxiliaries. We shall therefore be able to maintain a power factor close to unity as long as the compressor is running. During the "On Peak" period we shall probably drop away from unity considerably. However we shall try to design the motors so as to keep the power factor up as well as we can. I should like to use 2300 volts for the large motor. I take it this is what you supply. However safety considerations may influence me to install a 220 volt motor.

We shall lay out the electrical work inside the plant. To what point would you propose to bring your wires, along the present existing poles or some other place.

There is nothing else that occurs to me at present. I shall keep in touch with you as the project develops. In the meantime I wish to thank you for the cooperation you have shown in the achievement of a satisfactory development of the plans for the renovation of the Island Service Company's ice plant.

With kindest regards,

Very truly yours,

Nantucket Gas and Electric Company

NANTUCKET, MASS.

October 7, 1935

Dr. Alfred Bournemann
Stevens Institute of Technology
Department of Chemistry
Hoboken, New Jersey

Dear Dr. Bournemann:

Acknowledging your letter of October 4, I am sure from your questions that you have a good grasp of the general plan of the Rate as offered which the Trade calls a Primary Rate.

Answering paragraph #2, it is understood that all electric service will be metered through one kilowatt hour meter on the 2300 volt supply. There will be, of course, the necessary demand meters. Under the availability clause we might add (until the Company is so notified and agrees to said change). I might add that this is simply a protection against some very unusual situation which might occur in which our present facilities would be greatly affected, in order to take care of the additional demand.

It is our desire to sell you all the current you can use but it will be desirable on your part to keep the On Peak demand as low as possible. Naturally, there will be a certain amount of current which you have to use during the On Peak period, such as, the auxiliaries in the Ice Plant and the lights and pump at the Filling Station.

In answer to your fourth paragraph, the Rate is flexible enough to meet the conditions you have suggested, the availability clause taking care of the minimum use.

Paragraph #5 - I would certainly recommend 2300 volts for the large motor. This will avoid the additional expense of transformers and the necessary losses which their use entails. The present primary service is taken from the pole on the corner of the lumber building near the neon sign. This feeds three single phase transformers in the house at the coal shed. It is from this pole that I propose to make your service connection. By way of suggestion, why not bring up the three transformers from the Wharf, using what is necessary of the present primary cable, to feed into the Ice Plant? The secondary supply to the auxiliaries and Wharf can then be supplied from these transformers. There is already a main feed running all the way along the Wharf for power and light. I will assure you of a very reasonable price on the transformers.

ALEXANDER MACOMBER, PRESIDENT

CHARLES R. PRICHARD, JR., TREASURER

WILLIAM L. MATHER, MANAGER

Nantucket Gas and Electric Company

NANTUCKET, MASS.

-2-

Dr. Alfred Bournemann

10/7/35

Will be glad to have available here a plan of the general lay-out if you have one. Also, any further details so that I can get my information together.

With kindest regards

Very truly yours,

NANTUCKET GAS AND ELECTRIC COMPANY.



W. L. Mather
Manager.

WLM:D

October 31, 1935

Mr. William L. Mather
Nantucket Gas and Electric Company
Nantucket, Mass.

Dear Mr. Mather,

Bill Donnell telephoned me yesterday and amongst other things told me about a local ordinance or regulation which required the use of 220 volt current for all motors of more than one-half horse power capacity. This seems like a strange regulation. It would force us to use 220 volts for an open wire hoist when it is generally conceded that 110 volts is the safer for this kind of service. We would encounter this same sort of a contradiction in equipping conveyors and other ice handling machinery with motors. I call this a contradiction because, from a purely academic point of view, I should imagine that the primary consideration in drawing up local ordinances would be for the safety of the persons who might be exposed to the wires in question.

Would you be so kind as to enlighten me concerning the details of this ordinance or regulation? If a copy of it is available I should greatly appreciate receiving one to study.

I suppose that you will wish us to sign a formal contract for electric power when we change over our service to that which you have offered us for use in connection with the electrified ice plant. We should prefer this and I should like to receive a copy of the proposed contract as soon as you can conveniently send me one.

There is no hurry in regard to this latter matter but I should like to get the first question straightened up as soon as possible.

With best regards,

Very truly yours,

(Alfred Bornemann)

\$55 a week and expenses so that you may have to pay him \$45 instead of \$40. When Mr. Kehoe wrote him about the job he told him that the maximum pay he could probably ever expect to earn with you was \$2500 a year. This seemed agreeable to him so that if you can get together and you find that he suits you the question of salary ought not to cause any trouble.

I shall send to you during the next week a list of the machinery and the weight of the individual items so that you can advise me regarding its shipment to Nantucket.

One thing we shall need and I wonder if you can locate one for us and have him on tap- and that is a welder with an electric spot welding outfit. They have portable generators etc. on trucks and we may have to have one come down from New Bedford. Let me know, if possible, what his charge per day will be.

Mr. Mather said that he had an electrician whom he could recommend to do the electrical work. Can you also get a line on him so that we can get in touch with him directly if the need should arise.

Mr. Ingall said that someone was going to draw an accurate floor plan of the engine room showing necessary supports etc. If that is ready I should like to have it as soon as possible. Bill also let me know how long you can ~~not~~ manage on the ice you have at present stored away because we shall probably have to run the steam plant once more before we drain the tank and install the new brine coolers. In fact our whole construction schedule depends largely on this information. Foundations can be laid, compressor and electric motor installed, condensers set up and partitions removed between the tank room and engine room without disturbing the present lay-out. However we have to have a full ice house before we fix up the tank and change over the pipe connections and install the new auxiliaries. After that is done we can get to work on the ice house and the work to be done there won't take long. I've attached a rough lay-out of the new installation and I'd appreciate any suggestions you have to make.

In order to lay out the new brine coolers and the surge tank for the flooded system we shall need a good transit. Have you one available and is there someone there who knows how to use it?

One other thing, entirely aside from the above, will you send me a catalog of the millwrighting house which has the drawer frames made up to standard sizes?

With best regards to you all,

October 17, 1935

Dear Bill,

There are a number of things that I have to consult you about. The most important one, for the time being, has to do with Babylon. Recently I was over in Mr. Kehoe's office and he showed me two letters from Babylon whose contents were to me quite disturbing. He said in one of the letters that under no condition could he accept a permanent job on the Island due to the fact that his wife considered it the end of the world, etc.. Also his present employer has offered to keep him on during the winter so that we would have to make some deal with him, which would probably be possible, in order to have Babylon come down to Nantucket to supervise and help with the erection of the new ice machinery. However this sort of a solution to our problem is not what we'd hoped for and thereupon I wrote Babylon a letter which I've enclosed, asking him to define his standpoint in regard to the situation as we had hoped it would materialize. To date I have had no answer from him but on the strength of what he wrote Kehoe I have given him up altogether.

I have, again through Mr. Kehoe, another man lined up. His name is William C. Palson, 165 Hollis Ave. Braintree, Mass. His father used to make adsorption machines in Gloucester (or is it Gloucester) Mass. and he has been employed during various parts of his career as erector, designer and seller of ice plants. Kehoe thinks very highly of him, in fact uses him as an agent in New England whenever he requires one. Kehoe says, however, that he has one drawback and that is that his delivery is poor and he doesn't make a very favorable impression when you first meet him. We do not plan to use him as a salesman so this should not handicap him particularly in our eyes. The man is technically much better equipped than Babylon, having done work similar to that which Moelter is doing for us, and although he has never operated a plant for any length of time he has tested plants after having installed them and therefore the routine connected with the actual operation ought to be an easy thing for him to pick up. He sounds pretty good to me. What is your reaction? Now as to procedure- I think you ought to see him and then if he is acceptable to you he might come down to New York and inspect the machinery he would have to install. This would be cheaper than having him come here to see me, then down to Nantucket and then back down here again to look over the machinery- also it would be less time consuming. This latter is an important factor as we should get the foundations in and the equipment down to you by the end of November. I shall write Palson a letter, a copy of which I shall also enclose, and propose the matter to him in such a fashion that he can expect to hear further from either you or myself. For erection work he has been getting

Nantucket, Mass. Oct. 22, 1935

Mr. Alfred Bornemann,
525 River St.
Hoboken, N.J.

In Ans. to your letter Oct. 17, 1935

Dear Al,-

It looks as though Babylon is out of the picture and in reference to William C. Paxson, it seems as though the arrangement that Mr. Ingall was going to make Babylon still hold s as to Paxson. The idea was to pay them 50.00 a week plus expenses when we were erecting the new plant and then if they liked the Island and I liked them we could make some arrangements as to a permanent job. In this way it gives the engineer a chance to see what he has got to do and also it gives us a chance to look him over thoroughly.

Why don't you have him come down to see you and if you think he is all right, hire him on the above basis. We have got to have some one do the erecting and as you say we should be getting at it next month we can't waste too much time.

I have made inquiries in reference to welding and they are as follows,-

The New Bedford Boiler & Machine Co. quotes a rate of \$5.00 per hour for the actual use of the welding apparatus, plus \$1.50 per hour, per man, for labor, plus the transportation cost of their equipment to and from the Island.

The New Bedford Electric and Acetylene Welding Co. quoted a rate of \$4.50 per hour, plus the expense of transporting equipment, and the board of their men while at the Island.

This latter rate of \$4.50 per hour will include the time of two men, and the only additional expense would be for their board during their stay on the Island.

We have quite a lot of ice in the house now and it is hard to say how long it will last, you can't depend on the fishing trade at all. The only thing to do is to get every thing ready and go ahead with your plans on some definite date and then we can make a ten day run and fill the house with whatever it will take.

There are several transits on the Island and we will get one when it is needed. The layout that you have drawn looks all right to me, the only thing that I can suggest is that we have got to haul more than one can at a time but that can come up later.

I will enclose the blue print and send the catalog under separate cover.

Mr. Mather is away at the present time but will get in touch with him on the Electrician, and let you know.

Best Regards,
Bill.

October 4, 1935
525 River Street
Hohoken, N. J.

Dear Ossy,

Many thanks for the check- as you surmised it comes in pretty handy. I've got to get adjusted to the demands of a big household again and during the past ten days everyone has had some sort of a kink due to the necessities of acclimatizing himself. The pup has only made matters more difficult- it took a while for the kids to become accustomed to her and, last but not least, in spite of the fact that everyone is convinced that she should become or be house-broken noone is willing to take the time to look into the matter. To date it has been a sort of resolution with reservations.

I received the rate schedule from Mather and have only one or two questions in regard to it. First is it your understanding that you are only to have one meter on the 2360 volt supply line and that all your lamps, motors and ice plant load shall be supplied through that meter? Secondly, how did you people calculate the 25 KW demand for your plant? This last item looks all right to me, its at least reasonable, but I should like a little more dope on it.

On the whole the rate seems quite reasonable and due to its simplicity ought to be very convenient to work with. The one meter ought to appeal to you as ought also the cheapness of the current.

You have two transformers, haven't you? What are their ratings?

Did Mather say where he would like to bring the current into your property?

We have gathered together a good deal of dope on the electrical equipment and we shall have it all together with a tentative layout by the time you get here next week.

I should like to dicker a bit more with Mather but I am so agreeably surprised by his proposition schedule and way it is stated that the wind has been knocked out of my sails and it is taking me a while to get used to it. I shall write him a short letter acknowledging the receipt of his proposition and asking him the questions I have put to you above.

Let me know when you'll be down- With best regards to you and the boys,

Sincerely,

- 1 - automatic brine temperature recorder
- 1 - remote control switch and pilot light for the 2HP, 110
volt air blower motor.
- 1 - reserve remote control switch and pilot light
- 2 - remote control switch and pilot lights for the 2 1HP-
110 volt agitator motors
- 2 - remote control switches and pilot lights for the 2
110 volt well pumps, 1 or 2 HP- one pump is to be a stand-
by unit.

The third, and right hand, panel should contain all switching and metering equipment essential to the operation of the 80 HP, 2300 volt, 3 phase, 60 cycle, 900 RPM synchronous motor driving the compressor. This includes-

- 1 - D.C. ammeter
- 1 - A.C. ammeter with current transformer.
- 1 - exciter rheostat
- 1 - field switch with discharge resistance
- 1 - non-automatic oil switch

Mounted besides this panel is one reduced voltage starting compensator with under-voltage and over-load coils.

Provision is to be made when designing the frame for these switchboards for the addition of a fourth panel, to the right, in case it becomes desirable to install another motor and compressor as a standby or to increase the refrigerating capacity of the plant.

The lights for the machinery room, tank room and ice house are to be controled from convenient switches. The control for each of the other motors, such as those for the hoist, core pump, ice conveyor and ice stacker, which run intermittently is to be placed as close as feasible to the motor in question.

Babylon wrote me to the effect that he would never consider a job on the Island of a permanent character. We are still looking for a man and have two on the string. The one is to go to Nantucket during the week and the other is at present erecting a plant in Buffalo and I may try to get him to come down next weekend. I want to get you a good man. We are laying out the plans so that as soon as we find the right person no time will be lost. In a pinch we can erect with Babylon and look for a man afterwards.

We are sweltering again over here on the east coast. Everyone is well except the dog who had to be de-wormed. Jersey has repealed its sales tax, largely through the efforts of Uncle Walter, so now you are going to enjoy the spectacle of a state economising to pay the relief bill. I wonder---

Best regards to you and your household,

Sincerely,

October 25, 1935

Dear O. D. I.,

For the sake of order I have assembled below the major items of machinery you have commissioned me to buy for installation in the Island Service Company's ice plant. I have entered the prices of the various pieces as they were given us during our preliminary work. Final specifications have been sent out to be bid on in most of the cases where this seemed necessary and to date only Voigt has responded in the way we requested. I do not believe that the final prices will be much different than those recorded below.

- 1 - 9" x 9" V.S.A. ammonia compressor with belt wheel, valves and connections- Kehoe's final price \$840 - wgt. 8600#
- 1- set foundation bolts for machine and motor
- 1 - 80 HP. 900 RPM. synchronous motor with exciter and starting equipment for 2300 volts. Steven Hall final - \$750 wgt. 3500#
- 1 - switch board with three panels
- 1 - V-belt drive and pulley for compressor and motor
Gates Rubber Co. \$159.99
- 2 - Ammonia condensers with headers, valves and supporting stands
Voigt's bid \$1028 - wgt. 7600#
- 1 - 1/2 ton electric hoist for 110 volts \$285
- 2 - Brine coolers with valves, supporting stands, brine flues and agitator connections. Voigt's bid \$1180 wgt. 14650# 3154/100
- 2 - Agitators with Propeller Voigt's bid \$315 wgt. 750#
- 2 - Agitator drives
- 2 - 1 HP. motors, 110 volts for agitators
- 1 - Surge tank with valves, level gage, float valve and bypass
Voigt's bid \$234 wgt 1350#
- 1 - 2HP. air blower motor
- 1 - Ice stacker with motor
- 1 - Platform conveyer with motor
- 1 - Well pump with motor
- Doors for ice house
- Pipe covering
- Necessary steel for converting tank.

The prices I've assembled to date total \$4972 and probably the incidentals, for which no prices have been mentioned, will amount to \$1000 or \$1500. The total wgt. of this equipment, which contains all the heavy items, is 36,450#.

We are planing to use 2300 volts for the compressor motor. For lighting and all auxillaries we shall use 110 volts, single phase current.

I am proposing the following arrangement of the switchboard and I should be glad to hear any criticism you may wish to make regarding it. It is to be placed against the new partition we plan to put across the north end of the machinery room. A transformer vault is to be built behind this partition in the corner which it will make where it joins the wall of the tank room and the power company's 2300 volt, 3 phase line will be run right to the switchboard, upon which it will be distributed to the compressor motor and to the transformers. I believe that we will be able to use the three 15KVA transformers which are already installed upon the wharf but we shall have to purchase them from the Nantucket Gas and Electric Company. Mr. Mather has promised me a good price but I have entered into no further negotiations with him regarding their actual sale.

The switch board proper is to be composed of three panels made of slate. The instruments and switches (as far as possible) are also to be second hand. The instruments will, however, be refinished and recalibrated by a reliable instrument maker.

The left hand panel will control the incoming power and provide meters and switches for its general distribution. The equipment on it is to consist of the following items.

- 100 KW
Demand
60 KW - ice plant
25 KW - others
- should carry
transformer
output
- 1 - oil switch (with automatic cut-out) for 2300 volt, 3 phase, 60 cycle input
 - 1 - wattmeter, to measure the power being used, equipped with indicating device (a bell) to inform the engineer when more power is being drawn than the max. demand we wish to contract for.
 - 1 - power factor meter
 - 1 - 3 pole, 220 volt fused switch for the three phase outside circuit supplying light and power to everything but the ice plant. *connected load 65 HP approx.*
 - 3 - 2 pole, 110 volt fused switches for ice plant auxiliaries and lights. *connected load 45-20 HP*
 - 1 - A.C. Ammeter
 - 6 - Transfer switches for above so that the current in any phase of the outside 220 volt, 3 phase system or in any one of the 3 110 volt ice plant circuits may be measured.
- Provision shall be made in designing the bus bars for this panel to tap off some of the 2300 volt current to the transformers and distribute the rest to the panel controlling the 80 HP. compressor motor.

The second or middle panel will contain the remote control equipment for the motors whose continuous operation is essential for the proper functioning of the plant. Pilot lights are to be so arranged that the engineer can tell by glancing at the panel whether or not these important motors are ~~running~~ running or not. A summary of the equipment to be placed on this panel follows.

Nantucket Gas and Electric Company

NANTUCKET, MASS.

November 4, 1935.

Dr. Alfred Bornemann
Stevens Institute of Technology
Department of Chemistry
Hoboken,
New Jersey

Dear Dr. Bornemann:

Acknowledging your letter of October 31st, I am glad to have the opportunity to explain some of the requirements established by this Company in regard to size of motors to be used on our system. You will find the same requirements established by most Power and Light Companies. You will also find that as with other Companies that under certain conditions, exceptions are made. I also suggested to Bill Donnell that you might require 110 volt service on the hoist as a safety measure.

The customer is required to consult the Company before installing motors and related equipment. It is important that motors be carefully selected for the duty they are to perform and that they be of such character as not to impair the quality of service rendered by the Company either to the customer himself or to others, particularly in the matter of starting currents. Briefly, Motors of 1/2 Horse-power and less at 110 volts, Motors from 1/2 Horse-power to 5 Horse-power 220 volt single phase, above 5 Horse-power 220 volts three phase.

I do not think it advisable to make a formal contract where the Rate has to be filed with the Department of Public Utilities and it savors of discrimination in the eyes of the general public. In other words, if they meet the same conditions and requirements that you are meeting, they can have the same Rate. As a matter of record we can send you the Rate as outlined after we have filed it with the Commission and you can acknowledge the same in writing. However, I would be glad to take this up with the Executive Board if you will write me further.

Will appreciate receiving your specifications and layout as soon as available and will be glad to advise on any points affecting our local conditions.

With kindest regards.

Very truly yours,

NANTUCKET GAS AND ELECTRIC COMPANY

W. L. Mather

W. L. Mather
Manager

Nantucket Gas and Electric Company

NANTUCKET, MASS.

November 15, 1935

Dr. Alfred Borneman
Stevens Institute of Technology
Department of Chemistry
Hoboken, New Jersey

Dear Dr. Borneman:

Mr. Donnell has discussed with me some questions you have in regard to the electric system as in use by the Island Service Company.

The three single phase transformers at the Wharf supply the entire system by using a 4 wire secondary connection. The 4th wire is obtained from the neutral of one of the single phase transformers and supplies 110 volts for lighting purposes. The single phase motors are taken off two of the three phase lines. There is only a small amount of lighting so that the unbalance is relatively small. Enclosed is a list of the motor equipment installed.

There is no objection to your proposal of installing the small motors designed for 110 volts, however, it would be advisable to add an additional transformer to take care of your 110 volt circuit rather than unbalance your three phase system to the extent which would be necessary under your proposed plans.

What is the advantage in using the 110 volt equipment other than a safety factor on the hoist. I am interested in your set-up for a secondary distribution panel for remote control and wondered if it might be less confusing to install the control along side the motor with a pilot light if desired, or preferably some type of buzzer arrangement. I think it might be less confusing to the operator. However, these are merely suggestions and it might save some money on the installation. Would also suggest that fuse cutouts can be mounted to control the primary side of your transformer.

I have not as yet received an answer to my letter of November 4, but in sending along a list of the present equipment I have answered some of the questions that Bill and I discussed.

Sincerely,

NANTUCKET GAS AND ELECTRIC COMPANY

W. L. Mather
W. L. Mather
Manager

WLM:HC
Encl.

ELECTRIC EQUIPMENT INSTALLED - ISLAND SERVICE CO.

<u>Description</u>	<u>HP</u>	<u>Volts</u>	<u>Ph.</u>	<u>Rev.</u>
Coal Hoist	22	220	3	826
Wood Saw	10	220	3	1800
Emery Wheel	2	220	1	1800
Air Compressor	2	220	3	1800
Barrel Hoist	2	220	3	1850
Gas Pump	1/3	220	1	1725
" "	1/3	220	1	1725
" "	1/3	220	1	1725
" "	1/3	220	1	1725
Coal Loader	3	220	3	1730
" "	3	220	3	1730
Ice Crusher	3	220	3	1160
Coal Screen	1/2	220	3	1725
Holding Unit	10	220	3	

59 H.P.

Tel. for Nantucket Oct. 30. 1935 - Bill.

1. Palson is to come to New York -
A.B. is to telegraph him instructions
2. Primary & Secondary circuits cannot be
on the same panel.
3. All motors over $\frac{1}{2}$ hp. must be 220 vlt.,
single or 3 phase - local ordinance
4. Freight to Nantucket & then via steam boat.
Bill is looking up max. wt & max.
dimensions acceptable
5. Partition is an extension of the partition
behind coal bin and between it and
Ingersoll-Rand machine
6. No more than \$40 a week permanently.
while erecting \$50 and expenses: Operators
wages.
7. Jsc can drive piles -

1500 Morada Pl
October 30 1935

My dear Al:

Acknowledging your letters of Oct. 17th. & 25th. .
I was afraid that the results of Babylon's visit would be as it turned out.
Its hard to get anyone to come down to such an isolated place for an all
year round job. It takes a certain type. I doubt if a college man would
fit for that reason. Unfortunately a college education ~~does~~ not always do
what it is intended to do, make a man adaptable and self sufficient.
I presume that you are sending Bill D. copies of your letters ^{home} with list
of machinery. He can check better than I can.

In regard to ice stacker Bill has some dope that might help.
Bill Mather could check on switchboard better than I could or Bill D.
Suggest that you have him go over it with Bill D. and make suggestions.
We have a recording brine thermometer which should do.
I dont know whether all the motors on the end of the dock are 3 phase.
I am thinking particularly of the gas pumps. Better check with Bill D.
Otherwise as far as my poor knowledge goes things look OK
Perhaps Bill's idea re the new man you suggest is the best way but I
would query him as to whether he really thought he would like it down there
I thought the dog had worms from your description but consult Sid..
he is our dog expert. No charge for this advice. One of the services
of the Island SERVICE Co.!

Uncle Walter, like a lot of our brainy economic experts, seems to solve
problems backward and treats the symptoms and not the disease. If you
have spent money you have to pay the bill and the dear public will never
stop spending until you make the payment hurt. Thus "nuisance taxes" are
the best educator despite the fact (or because of it) that they are such a
nuisance. Sorry but I cant agree with with him but with your Governor.
If you dont pay the bill Peter will have to sweat it out along with
Walter Jr. & Walter III etc.
Have had wonderful weather here but it seems as if it was turning cold.
Heavy frosts up north.

Sincerely,

OD.

October 27, 1935

Dear Bill,

Many thanks for the millwrighting catalogue. Where does the stuff come from and about how long would it take to get here in case I should want to order a few articles?

I've enclosed a letter to O.D.I.. ^{comments} Any ~~comments~~ or remarks you have to make regarding any part of it are solicited. ~~XXXXXX~~ The freight question is one we should think about. You are the specialist here and the following are only a few remarks from an amateur. The condensers, brine coolers, etc. will probably make up a carload, and they will most probably be bought from the same place, so that they can be routed either to Woods Hole or New Bedford. The motor, switchboard and compressor, come from around New York and they might be sent down on a 10 ton truck to either of those places or perhaps right through to Nantucket. Do you pay the steamship company for a truck- loaded or unloaded-? Who takes care of the unloading from train car or truck and the subsequent loading on the boat?

Regarding the brine temperature recorder mentioned on my list as equipment to be placed upon one of the switchboards. I believe that you have one we might mount on this board. Am I right? If so, will you kindly give me the name of its make, type and serial number. An old chart would also be helpful in completely identifying it.

I have also enclosed a letter to Palson which is to go off with this same mail. I trust that the arrangements I've suggested to him are satisfactory to ~~KIM~~ you. I know you'll take care of him properly and I'm leaving the question of salary open for the two of you to discuss. If you think he would do, I'll have him down to New York and he can then look over the machinery we intend to buy, supervise its crating and go over the plans with Moelter and myself. I've got what seems to be another good man on tap. He is at present on a job in Buffalo but will be through there in about three weeks. His name is Eugene Collatz, married, early thirties, lived in this country as a boy even though born in Germany, went to Germany to learn the machinists trade and served his apprenticeship there, came back here and has worked for Carbondale, Paulson and Heinz (whom I know and who recommended him to me) and from all reports is a fine chap, able mechanic, etc. If Palson doesn't suit you hold off and I shall have this fellow come down either next week end or over election day.

I've also enclosed Babylon's letter to me. It is decent of him to be so straightforward. In a pinch I think we can get him to come down to do the erecting but I would rather have someone there who would at least consider a permanent offer. Don't you feel that way about it.

Best regards -

Sincerely -

October 17, 1935

Dear Ossy,

Glad to hear, through Dad, that you arrived safely. It must have been a great trip!!

I've enclosed a letter to Bill- The first part is most important and confirms the impression you had from the Babylon's visit. I really believe it better to chuck Babylon if he, under no conditions, would consider his job with you people as a permanent one. Palson, according to Kehoe, is a much better type of person than Babylon. He is better educated and seems to have had more engineering experience. We'll see what Bill's impression of him is.

I might be able to interest a Stevens graduate in the job. What would you think of a man of that type? I'm a little on the fence. Between us what could the future of a satisfactory man with a college education be with the I. S. Co.? I have two men in mind- one, a classmate of mine and a good lad, who has been with the Carbondale people for several years and the other, class of '25, who was in the refrigerating and heating consulting game, on his own, for several years. This last fellow made quite a go of it for a while but then the business folded up as so many did during the last years.

Moelter and I looked at Kehoe's 9 x 9 Wednesday. It's all right. Bearings are in good shape, valves O. K. and the inside looks just as clean as a new one. I haven't closed on the price yet but I think it will be 600 dollars.

I had a very nice letter from Wight and he assures me that an electrical installation could only favorably affect your rates, that 2300 volts is all right with them, i.e. no better nor worse than 220, and that he will investigate, more fully, the question of using the steam unit as a standby and its affect on the insurance (providing we give them due notice of our intention to start it up).

That is all for the time being. Uncle Larry's funeral was a very impressive affair- a little tough though on all of us- he had a delightfully courteous manner. No one knows yet how Aunt Emma will be fixed.

Best regards to you, Bill and Florence,

Sincerely,

I told Bill Mather that you would write him in reference to the 110 volt motors, and I checked with him and he said that all companys have that ~~wiring~~ ^{rule}, that anything over one half horse power shall be 220 volts. He suggested that we might still use the air hoist.

Hope you and your family are well. With best regards,

Bill.

WD:T

November 6, 1935

Dear Bill,

I received your letter of Nov. 2nd this morning and in acknowledging its receipt shall fire a few questions at you.

how

First of all I should like to know your present transformers are connected up. Do you use 110 volts for lighting and incidental small motors or 220 volts, 3 phase for all electrical equipment on the wharf? If you use 110 volt, single phase how do you get it from the 220 volt, 3 phase distribution system?

Concerning the rule limiting the use of 110 volts to motors of $\frac{1}{2}$ horse power and under, I have found that the practise around here is the following. The rule applies to motors of two HP and under and then only to customers who are supplied with low voltage service, i.e. 110 - 220 volts. I called up the N.J. Public Service and they gave me the above information and also told me that whenever the customer owned his transformers and they metered the primary they made no regulations at all concerning the voltages used for motors. Perhaps Mather's rule does not apply to the type of service we shall be purchasing - it wouldn't if it were in accord with the custom around here. You see the purpose of such a ruling is to prevent undue flickering of the lights whenever a motor is turned on. When throwing a motor into the line there is a large momentary current demand which brings about a drop in voltage which, in turn, causes the lights to flicker. This has however practically no effect on the primary 2300 volt service so we would be the only ones to suffer if we did have 2 and 3 HP, 110 volt motors coming on the line intermittantly. This effect can also be remedied by supplying these motors from individual 220 - 110 volt transformers, providing we feel it desirable.

Now pile driving. How long a pile can you drive with your rig? Have you ever driven piles "to refusal"? If so, how far down did they go and where were the piles driven? How long a pile have you people ever driven? About how high are the engine room walls? Upon inquiry Walter Kidde told me that they had driven piles to support the present engine foundations and that they had laid reinforced concrete mats under the boilers and lighter equipment.

Are there any up-rights supporting the engine room roof scattered about the engine room floor or is the roof supported by the walls? If there are any up-rights, please send me a sketch showing where they are in relation to the south and west walls.

Also I should like very much to know the distance between the south wall of the engine room and the south side of the wall which at present separates the passageway, in which the Ingersoll Rand compressor is placed, from the boiler room. This and the position of any up-rights I must know accurately to an inch at least.

with best regards

Sincerely

Nantucket, Mass. Nov. 14, 1935

Dear Al.-

Ans. yours Nov. 6, 1935

We use 110 volts for lighting and the most of our equipment is 220 - 3 phase as to motors. Our gasoline pumps are single phase, 220 Volts. Wm. Mather is going to write you this afternoon about this and also about other electrical equipment. To get our 110 volt single phase we tap off the neutral side of one transformer.

We drove spiles under the big Ingersoll-Rand Compressor but I don't think it will be necessary to drive any under a compressor weighing only 8600 lbs. and that will save quite a bit of expense.

In my last letter I asked for information as to the height and width of the various pcs. of machinery which you haven't answered yet.

I am enclosing a blueprint of the engine room and have marked the uprights etc. and as it is accurate you can get the measurements from this. I am enclosing a letter from the Jarvis Engineering Co. which might be of some interest.

I have written Mr. Ingall suggesting that if we still have trouble in locating a man that perhaps it might be just as well to get in touch with an engineering firm that does this kind of work and have them take the whole thing on contract.

Best Regards,
Bill.

Mar. 21, 1935

Dear Bill,

I've enclosed the letter I wrote to Mr. Eugene Collatz as a response to his inquiry concerning wages, etc.. I hope that its contents are satisfactory to you and that I am not involving you too seriously in offering your assistance in "flat" hunting.

I am also sending you a new outlay for the switchboard which I think is a good deal simpler and more rational than the one I had proposed before. You might show it to Mather to see what he thinks about it. Please thank him for the list of motors and tell him that we shall try to cut down on the use of 110 volt motors as much as possible.

There are a few points in connection with the design of the switchboard which I should like to elucidate. On the main panel we hope to have some kind of an attachment connected in circuit with the indicating watt meter so as to actuate a split bell when the demand we contract for is being exceeded. On the auxiliaries panel we have cut down the remote control apparatus to push-button stations with red indicating lamps for use in connection with the 2 agitators and 2 pumps. The starting and cutout boxes for these motors will be placed close to them. There is also to be a bell alarm on this panel set off by a drop in pump delivery pressure. This warns the engineer that his condenser water supply is insufficient. We have debated a good deal concerning the necessity of the two watt-hour meters. They permit you to measure the power consumption of your ice plant lights and auxiliaries and also the power consumed by the rest of the Island Service Company. The power used by the large motor and the loss through the transformers is then the difference between these two readings and the reading, taken for the same period, on the company's meter. I would recommend such instruments for it is only by their use that you can trace your power consumption and allocate it properly. If you do not feel it desirable to have these meters or think that sub-metering is unnecessary please tell me for we can save about \$100 by not putting them in. The equipment on the third panel is that necessary to start and control the large compressor motor. There will also be an automatic cut-out which will stop the motors and start a siren in case the ammonia pressure should reach a dangerous value.

I guess that this is all for the time being- Kindest regards,

Sincerely,

1500 MORADA PLACE
PASADENA, CALIFORNIA

Nov. 19. 1935

Dear Al:

I have ^{not} heard much from you of late. Indirectly I hear you are having trouble finding the "forgotten man" who will be willing to go to an isolated island for a lifetime. Well Bill writes me that his father has about decided to go on pension & that he thinks if you can find someone to erect and start things off. he can work up an iceplant force from our own material with Oscar in charge. He & Bill Mather are working on the problem of the switch boards & I would give their suggestions full weight for Bill M. is a clever little chap & practical & Bill D. also.

Sid is expecting the stock in Feb. Get Moelter to give him the dope he gave me regarding McKee refrigerators. He also spoke of a meeting of ice men some time & if it is held at the proper time perhaps Sid can go.

Some more of our boats have left & are fishing
out of New Bedford so that holds our volume trade
down. However Sid is going out selling next year
and that may help.

You have all the news you end so
loosen up. I am merely a farmer &
house keeper now. Hope the hard is all
house broke now & the family reconciled.

Best regards to all.

Oswald.

Island Service Company

Nantucket, Mass.

Nov. 21, 1935

Dear Al.-

The measurement that you wanted is 50 ft. 5".

Best regards,
Bill.

December 2, 1935

Dear Ossy,

At last we have found the "forgotten man" and I have enclosed my correspondence relating to him. Bill has received copies of all the letters I have written to Collatz but I thought you'd want his answers etc. for a permanent record.

I shall go ahead now and purchase the equipment and we plan to start work on the erection and installation right after the New Year. Blue prints will be drawn up during the next week or so and I shall send them out to you, Bill, Mr. Wight and all others concerned as soon as they appear.

All the other problems have been pretty well ironed out and all that has been holding us up is to get someone to go down and do the work.

You will notice, from the correspondence, that Collatz is on for the year. If you feel at the end of this period that your gang, under Oscar, can swing the job there ought to be no difficulty ~~arranging~~ in turning the work over to them. However I believe that you will find this chap very satisfactory and well worth the money you have to pay him.

Aunt Florence left Saturday for California- Dad leaves right after the first of the year- It seems to be the place to go to. When those two get together you'd think it was a religioh. We had to do away with our "hund" on Thanksgiving day. She had developed distemper and as it had effected her nervous system her chances of recovering were nil. So we were merciful not only to the dog but to ourselves. It was really quite a job to take care of her. We were 31 to dinner on Thanksgiving day at Uncle Walter's. Everybody was called upon to speak and Carl threw quite a bomb into the group by pleading for a political philosophy which was based on unselfishness and social justice. The debate lasted two hours and no one lost his temper which is quite a record for our family.

The ice conference was about two weeks ago in Chicago. I forgot about it. Kehoe went out but Moelter didn't. I'll get him to draw Sid into something around the East here if an occasion presents itself.

How are the kids making out in school- or out as far as that goes? Have you taken any trips yet or are you saving them for the influx of the Easterners? I've finally succumbed and bought myself a Weston photometer. Now I promise myself real good pictures. I'm just wondering what I will find to spend money on next. The photographic accessories business must be dammed ~~lucrative~~ lucrative. At least I know a number of suckers. Enough for to-day.

y ms.

Nantucket Gas and Electric Company

NANTUCKET, MASS.

December 2, 1935.

Dr. Alfred Bournemann
Department of Chemistry
Stevens Institute of Technology
Hoboken, New Jersey

Dear Dr. Bournemann:

Bill Donnell has shown me the tentative switchboard lay-out. I would like to say at this time that I somehow had the idea that you had a tentative proposition to purchase second hand equipment and that you would have to re-arrange it to fit the Isco Job.

Before you decide finally on your auxiliaries panel, I would suggest that all of the auxiliary electrical lay-out should be made indicating conduit runs and distribution centers. In other words, you might need more facilities than at present indicated on the feeder panel.

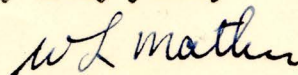
It is most desirable to have the sub-metering and I would even think it necessary to meter the lighting circuits separately or make some provision whereby a meter can be switched onto the Ice Plant lighting or the Wharf lighting. Very often there is a question concerning the allocation of costs between departments.

Concerning the synchronous motor control panel, if you have any leeway on the expense I should certainly consider either automatic or semi-automatic starting equipment because this seems to be where the Killen Company employees have all their trouble, in getting the motor on the line. Sometimes they forget to pull out the exciter switch after shutting down the main unit.

I do not favor the four wire star connection for the secondary supply because as you have indicated, the single phase voltage is 199 and while a 220 volt single phase motor will run, it is not efficient and will have a tendency to lag and would cause difficulty when starting under some load condition. However, there are only one or two small motors concerned and it might be all right.

I hope you will not think I am butting in on some of the questions as might be inferred but when Bill and I discussed this, he suggested my writing you.

Very truly yours,



W. L. Mather
Manager

January 4, 1936

Mr. W. L. Mather
Nantucket Gas & Electric Co.
Nantucket, Mass.

Dear Mr. Mather:

I owe you a thousand apologies for not being a better correspondent. Perhaps I am to be somewhat excused, for I always had the feeling that whatever I wrote Bill Donnell would come to your attention if it had any interest to you. As I do my own typing I am exceedingly sparing in expressing myself. This will also explain the appearance of some of my letters.

I have appreciated your suggestions very much and have incorporated practically all of them in our final plans, a copy of which I hope will soon be in your hands. I have made the starting of the synchronous motor somewhat automatic and adopted a delta connection for the secondaries of our transformers. The feeder panels are only designed to contain switches for the feeder lines. Cut-out boxes and distribution centers will have to be placed separately throughout the plant as is customary in such cases.

I am also very grateful to you for putting us in touch with Mr. Ralph Floyd. I hope that he will work well with Mr. Eugene Collaty, whom we have engaged to erect the ice plant, and see it through its first year

I wish you the very happiest of a New Year and remain,

Cordially yours,

AB

Ice Plant + Tank

1. Drive Piles + pour Foundations.
2. strip tank + weld pathways, etc.
3. Build Partition wall and Transformer vault
4. Electrical work Erect switchboard
5. Erect Condensers
6. " Compressor
7. " Brine Cooler
8. Auxiliaries Ice chute, etc.
9. Piping. Insulation. Painting - etc.

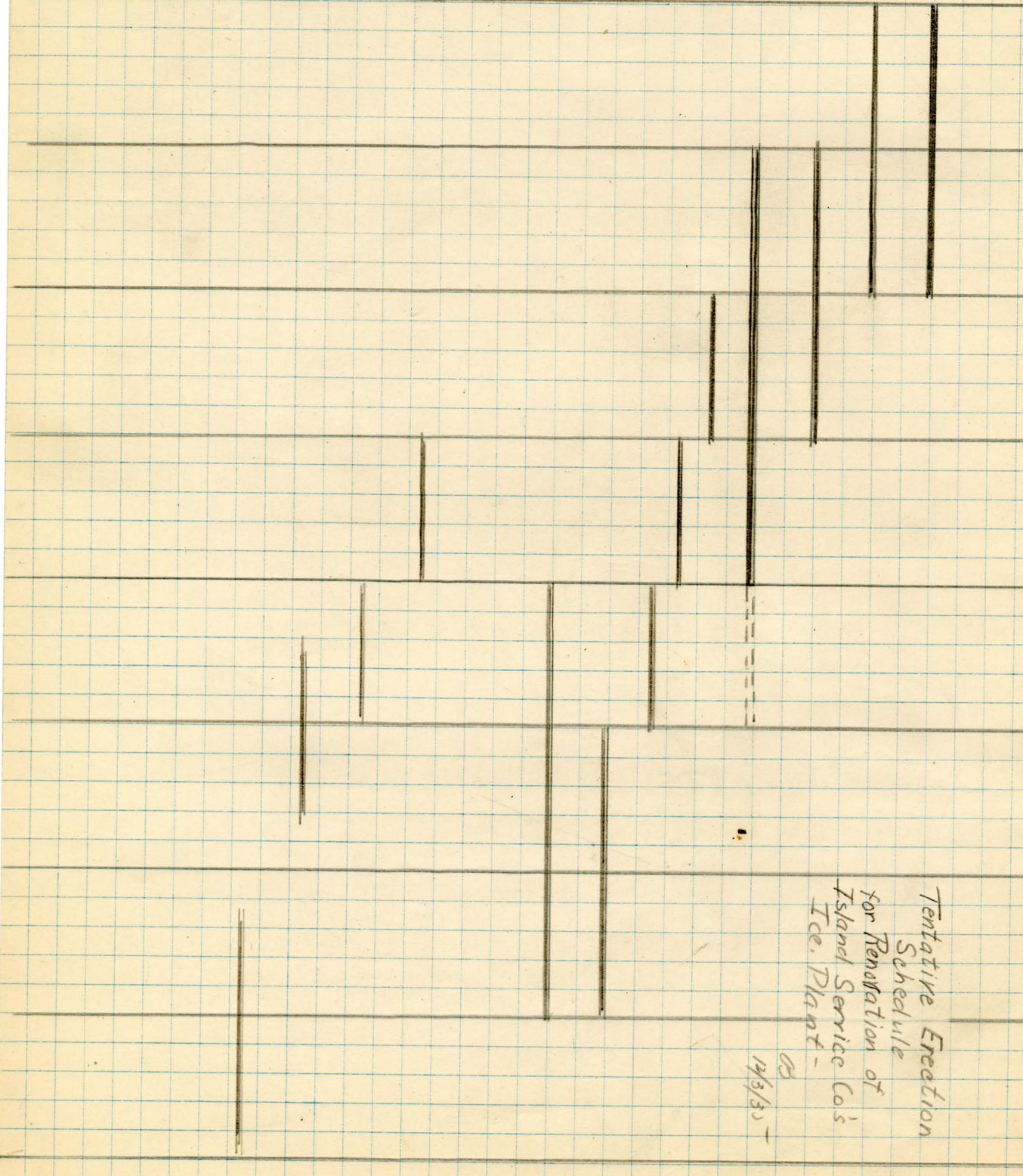
Ice House

1. Remove Hot Room Partition
2. Erect Pipes in Hot room
3. Install new doors etc
4. Build in conveyor

Jan 6-10 Jan 13-17 Jan 20-24 Jan 27-31 Feb 3-7 Feb 10-14 Feb 17-21 Feb 24-28

Tentative Erection
Schedule
for Renovation of
Island Service Co's
Ice Plant -

12/3/35 -



December 3, 1935

Dear Bill,

We have finally found an engineer! Eugene Collatz has sent me his acceptance and I have enclosed a copy of the letter I sent him to confirm the job. I sent Mr. Ingall my complete file regarding him so that he could look it over and if he wished send it on to you to keep. As you can see from the letter I sent Collatz we feel that work can start on the 6th of Jan. I am trying to get Jan. 6th delivery ^{for} of the stuff from Vogt and Frick so that we will surely have it on hand two weeks later when we actually need it. I have also attached a rough schedule for the work to be done on the ice plant proper. We shall have to work in the alterations to the ice house as best we can. We have to wait until the house is nearly empty in order to put in the conveyor. The ante-room partition can be removed and a lot of other work done either while the ice plant is being erected or after the other work is finished.

For all this work we shall probably need a squad of five or six ~~men~~ men. The erector acts as foreman and instructs each one, as he finds it necessary, in what he has to do. Can you free that many men from other jobs?

Will you get in touch with the electrician and the welders to see if they can start work on the 13th of Jan.? You can make the arrangement only tentative, for the present, as we have to make sure of our deliveries and erector first. Collatz wants to finish the job he is at present working on and even though he expects to be through by the first of the year- you never can tell.

Concerning piles again- Were you able to get any sort of an idea as to how deep one could drive a pile in the made up land which comprises your wharf? Have you any piles on hand? If so, how long are they? How long would it take to get them down to Nantucket if you haven't any in stock?

The wattmeters to submeter your low voltage circuits (see letter of Nov. 21) cost 175 dollars to install. I shall not recommend them so strongly under these conditions so that unless you are particularly anxious to sub-meter your power we shall leave them off the auxillaries switchboard.

In a few days I shall send on to you the specifications of the equipment we shall want to order. Most of the terms are half upon ordering and half upon delivery, but you seem to have good credit - so that I could probably change that somewhat if you so desire. Let

me know if you prefer a different arrangement than the usual one.

I have attached the proposal of Kenoe's in regard to the compressor we wish to buy. He told me that if you paid him one or two hundred dollars now and the rest upon delivery it would be satisfactory to him. You can sign this and send him a check as soon as it is convenient. He will hold this machinery in his yard for us until we wish to pick it up. It is my idea to send all this equipment, i.e. compressor, motor, switchboard and a number of small items down to New Bedford or Woods Hole by truck. I think we can make up a good truck load and save quite a bit of ~~money~~ money by doing so. The stuff from Frick and Vogt will have to be shipped via rail to New Bedford or Woods Hole. We have split the order between these two firms and save about 400 dollars by so doing. Is there any difference in the Steamboat freight from these two ports. How about insurance for this machinery while it is in transit. Is it necessary? Do you usually take out insurance of this nature? If so will you take care of it or shall I turn the matter over to Lawrence Sanders?

Blue prints will be along in about ten days or two weeks. I had a whole lot to talk with you about but I have been interrupted so often that I am afraid that I have missed up on a few points. I'm darn glad to see this thing get under way. The program I have attached is very approximate but it will give you some idea as to what all has to be done and when it should be undertaken.

This will be all for the present - with best regards,

Sincerely,

Mr. Alfred Bornemann, -
525 River St.
Hoboken, N. J.

Nantucket, Mass. Dec. 9, 1935

Dear Al.

Ans. your letters Dec. 3, 4, 1935

I am glad you have decided to start work the first of January and that you have found an engineer. Don't worry about men as we can supply all that is needed. The electrician that we had in mind is coming down to do some work for the Electric Light Co. and I will see him then and try and make arrangements otherwise I will get in touch with someone else. I will write New Bedford this afternoon on the welding outfit.

We have driven spiles from ten to twelve feet and as we are now installing some new spiles on the wharf, I will save the old ones that we take out and we can use those if necessary. It takes from a week to ten days to get spiles to the Island.

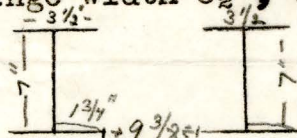
In reference to meters we can let those go until later, but leave a space on the switchboard for them. We can take care of the payments upon arrival if that is satisfactory.

Enclosed find signed proposals and check for Two Hundred Dollars for Kehoe.

It is best to have the machinery come through from New Bedford, Mass as they have better facilities for handling there and the difference in freight is very small.

In reference to insurance on machinery, as far as I know the carrier guarantees safe delivery and they carry their own insurance in other words if any thing is broken they make it good.

The measurements in regards to the flange width etc. is as follows: Flange width $3\frac{1}{2}$ ", web height 7", distance between webs $9\frac{3}{8}$ ".



The ~~lower~~ upper sides of lower flange is not flat but has sort of a bevel to it. The present hoist runs on the top flanges which are flat.

Best Regards,
Bill.

December 4, 1935

Dear Bill,

I have just checked up and found that I forgot to enclose my last letter to Collatz in the letter I sent off last night as I had intended to. It, i.e. the copy, is attached.

I also forgot to ask you to measure the flange width, web height and distance between webs of the present crane carriage. The sketch below will show you exactly ~~what~~ which measurements I am referring to. We need this information so as to be able to order an electric hoist to run on the upper sides of the lower flanges.



This noon a letter came from Mather- He strongly recommends the sub-metering equipment. As I pointed out in my letter yesterday these meters are quite expensive and unless you are very anxious to allocate your electricity costs between the various departments probably not worth the price. Your total yearly bill will be about \$3600~~0~~, of this about 600 is for lighting and power used outside the ice plant, about this much will also be used for auxiliaries etc. inside the plant. For your cost accounting will you be satisfied with an estimate of these values or must you know them exactly. The more I think about your particular requirements the less I think you need these meters. There is no sense in cluttering up the switchboard with a lot of stuff you don't really need. If you want these meters let me know and we will put them on the boards. In any case I shall leave room for them so that they can be put in later in case you agree with me as to their present utility.

I received the measurement of the length of the new machinery room- many thanks. Let me hear from you regarding the above as soon as possible.

Sincerely,

December 11, 1935

Dear Bill,

I received your letter of the 9th this morning and am sending off your check and the signed proposals to Kehoe to-day. Thanks for the other information.

I have enclosed Stephen Hall's specifications and proposal. The objects mentioned below are to be bought making reference to this letter of theirs (dated Dec. 5, 1935) and the guaranty which is attached.

1 - 80 HP motor, accessories and control Panel	840.00
1 - Incoming line panel and 2- Feeder panels	400.00
1 - pressure switch with alarm	20.00
1 - high pressure switch with alarm	15.00
Total	1275.00

As you can see, we have adopted Mather's suggestions and have made provision for delta connected transformers secondaries and an automatic field switch for the exciter. I have however omitted all submetering devices but room will be left on the panels for such apparatus if in the future you should desire to install it. bearing

The penciled notations have no direct bearing on these specifications, so may be neglected. The guaranty sheet is just for your information. A check and a letter from you ordering the stuff is all that will be required to set them to work.

I have also enclosed a sketch of the motor and the design for the front of the switchboard. The start-stop push buttons will actually be placed a bit higher on the panel so that a meter may be placed between them and the switch.

You may keep all this. I shall send Mr. Ingall a copy as soon as all of the specifications are together. Both Vogt and Frick had to revise the first set they sent to me and, as I have not to date received a satisfactory set, I have not been able to send them on to you.

Have you any electric water pumps at present in the ice plant. I don't recall ever having seen any and as they are not mentioned on the list Mather sent me I suppose you haven't. If however, I am mistaken please inform me as to their size and capacity.

Best regards,

December 15, 1935

Dear Bill,

I have enclosed the proposal from Vogt concerning the brine coolers. Their specifications are acceptable and accurate - the only objection is the time they wish to take in fabricating these two items. We will however save time by accepting the conditions as set down in the accompanying folders and then working on them for an earlier delivery. Will you please sign both the copies of this contract and send them with a check either to me for forwarding or directly to T. W. Geoghan, 80 Broad St., New York, Vogt's sales engineer for this district.

The proposals from Frick are in a mess- They have finally been drawn up to conform with the quotation they made but they have also raised the price 250 dollars pleading a mistake in the original quotation. Unless they come back to their original price we shall award the job to someone else. The annoying aspect of the whole situation is the loss of time involved in waiting for these people to do things right.

This is all for the time being. I hope that I shall be able to fire the rest of the quotations down to you soon. But you see what we are up against.

Best regards,

Sincerely,

Island Service Company

Dr. Alfred Borneman,
525 River St.
Hoboken, N.J.

Nantucket, Mass.

Dec. 16, 1935

Dear Al.

Enclosed find order for electrical equipment as per your letter of Dec. 11, 1935., also check for 200.00 part payment. I understand that as a rule the guaranty runs longer than 3 months and it seems in our case that this ~~xxx~~ would have to be as we won't be running for any length of time until after 3 months have passed.

We have no electric water pumps, therefore we will have to buy. I have received a letter from Kehoe, thanking us for his order.

Best Regards,
Bill.

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We have no electric water pumps, therefore we will have to buy. I have received a letter from Kehoe, thanking us for his order.

Best Regards,
Bill.

Island Service Company

Mr. Alfred Bornemann,
525 River St.
Hoboken, N.J.

Nantucket, Mass. Dec. 17, 1935

Dear Al.-

Enclosed find signed contracts with Henry Vogt Co. and check
for 300.00.

Best Regards,
Bill.

December 18, 1935

Dear Bill,

I received your letter of Dec. 16th this morning. ^{and} Have already sent on the check and order to Stephen Hall. They have agreed to extend the guaranty period from three months to six and in this period any faults in the equipment they supply will certainly show up. I hope that this ^{and} agreeable to you.

Enclosed is the quotation for the V-belt drive. The price is 159.99 dollars. Will you please write out an order for this material and send it either to the New York representative or to me for forwarding. Kindly note on the order that the material is to be shipped before Jan. 6 to Stephen Hall & Co., Inc., 7th and Adams Street, Hoboken, N.J. and plainly marked as belonging to the Island Service Co.. We are doing this so that Stephen Hall can fit the sheave on to the motor shaft. Upon second thought, you had better send the order to me first and I can then enclose a blue-print of the motor with it when I forward it on to the Gates Rubber Company. The terms are cash on delivery so that you needn't worry about advancing money to clinch the deal.

The Frick matter is still in abeyance- They are considering cutting the difference in half- I ~~don't~~ don't like the idea very much but the agitators and surge tank ought to come from them. They were very much cheaper than Vogt on these items and have held to their original price on these two things. The advance in price is to be charged mostly against the condenser. We shall probably reach a decision to-morrow and I shall send you the final specifications as soon as possible.

I am going to send O. D. I. the specifications, i.e. copies thereof, to-day so that He will know what we have been doing to date.

Best regards,

(Alfred Bornemann)

December 24, 1935

Dear Bill,

The matter of the condensers has finally been straightened out. We have decided to take the order away from Frick and give it to Vogt. This is what we should have done in the first place. The whole picture is the following:

Article	Prices on the dates mentioned			
	Quotation 11/1	Spec. 12/6	Spec. 12/11	Spec. 12/23
2 Condensers	\$830		\$1068	\$998
2 Agitators	\$ 226		same	same
1 Surge tank	\$ 87		same	same
1 Float	<u>\$ 66</u>		<u>same</u>	<u>same</u>
Total	\$1209	\$ 1209	\$ 1447	\$1377

Frick will still get the Agitators, Surge Tank and Float but Vogt is to get the condensers for a price of \$1028. This will be cheaper than buying from Frick if the freight costs are considered. The Brine coolers and Condensers will make up a full car load and that makes the transportation cheaper. The difference in freight is about \$100.

~~I have~~ I have enclosed the specifications from Vogt for the condensers and they need your signature and a check, 25% of the order. Collatz is coming over here Friday and I shall go over our plans with him and take him down to look at the motor and compressor.

The Frick things will be sent to you as soon as they are put in satisfactory shape.

Collatz also asked me to inform you that he had sent a trunk or two to you for safekeeping until he came down.

This letter is a mess- it has been written in great haste- I want to take advantage of the holidays in getting it to you. I hope that you are in accord with the way these contracts were finally dealt out. I wish that I had never wasted time in dickering with Frick.

With best regards- Incidentally I received the order for the Gates Rubber Co. Also thanks, in advance, for the calendars.

Sincerely,

Jelaud Service Company

Nantucket, Mass.

Dec. 26, 1935

Dear Al.-

Enclosed find signed contract for Henry Vogt Company and check for 275.00, 25% payment on the condensers.

I have heard from Collatz in reference to his trunks and he says that he will probably be here about Jan. 4, 1936. I will take care of trunks and help him find an apartment.

We had a white Christmas here and to-day it is snowing hard with cold weather predicted for to-morrow.

Best regards,
Bill.

December 19, 1935

Dear Bill,

Received the signed Vogt proposal and check for three hundred dollars this morning. I am sending both to their New York representative with this same mail.

I spoke to him this morning over the telephone and he has promised us a three weeks delivery instead of four and also has changed the terms of the final payment from

75% when goods are ready to ship - to

75% Balance sight draft against bill of lading.

I persuaded him to do this so that the material would be sent off as soon as it is finished and not held in Louisville until they have received your final check. I wrote in these changes over your signature and I trust that you will not object to them.

I've enclosed one of our Christmas cards as a greeting to you and the rest of the bunch- The lake is Moosehead in Maine, the man with the pack is on the side of Mt. Washington and the religious looking city is Dresden- the rest speaks for itself. Best wishes to you and yours for Christmas and the New Year,

Sincerely,

Island Service Company

Nantucket, Mass. Dec. 20, 1935

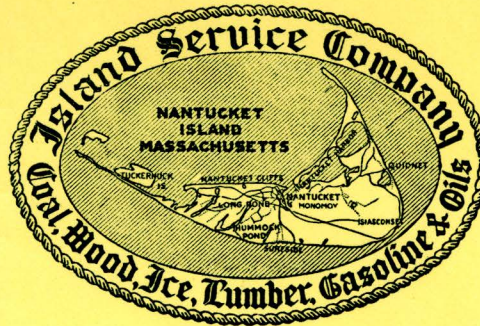
Dear Al:-

Enclosed find order to the The Gates Rubber Co. as per your letter Dec. 18, 1935.

We have sent you another calendar and sent one to Mrs. Just. The calendars are going over good and we are having quite a demand for them

Wishing you a Merry Christmas,

Best regards,
Bill.



Island Service Company, Inc.

Nantucket, Mass.

December 28, 1935.

Dr. Alfred Bornemann,
525 River Street,
Hoboken, New Jersey.

Dear Al:

I have made a tentative arrangement with Mr. Ralph Floyd, 2 Tully Road, Marblehead, Mass., to take care of the electrical work in the Plant when ready. He can come with a three day notice. Have you the lay-out of electrical equipment ready? If so, send it along so we can pick off what conduit and heavy wire is needed. Mr. Floyd has some equipment on hand which he will guarantee for one year, and we probably could save one half in buying from him. Mr. Floyd would like complete name plate rating of motor and suggests that we keep this motor dry in transportation, and when it arrives here in Nantucket we can put it over in the Electric Light Plant, where it is warm and it will be O.K. over there until we are ready to use it.

I think it would be a good plan if you wrote direct to Mr. Floyd giving him some general information. He is to receive \$1.10 per hour straight time and will work as many hours daily as necessary including Sundays. We are to take care of his board and room, which will amount to \$15. a week.

Mr. Mather recommends Mr. Floyd very highly, and in talking to him I think he will be just the man for this work.

With best regards,

Bill

WD:T

2

I am sending Mr. Ingall a copy of my instructions to Collatz and blue prints. He is also finally to receive copies of the specifications you have signed.

With best regards-

Sincerely,

AB:EG
Enc.

Hoboken, N. J.
January 4, 1936

Mr. William Donnell
Island Service Company
Nantucket, Mass.

Dear Bill:

Enclosed is a copy of a letter I am sending to Collatz in order to give him a general picture of what we wish to accomplish with the ice plant. Please feel perfectly free to criticize or countermand any of the statements I have made.

You will have to give Collatz a certain amount of freedom in purchasing directly small items such as pipe fittings, tools, valves and so forth, which we cannot anticipate his needing this far away from the job. I should like, however, to have a copy of any orders he makes with the prices you have to pay for the material and I have suggested to him that he keep a pad which will enable him to send me carbon copies of orders or other information he thinks advisable.

Moelter has prepared drawings which I am sending under separate cover. One or two are still to be completed and I suppose I will have to put a little dynamite under his behind.

I have enclosed the accepted contract from Vogt for the brine coolers.

I have also enclosed the contract with Frick for the surge tank, ~~agitatator~~ and float valve. Will you kindly sign it and send me a down payment to forward to them. Even these prices underwent a change and you will do me a great favor by revising the details I sent you ten days ago accordingly. The whole situation was very exasperating.

I received your letter this morning informing me about the electrician. I shall write him directly, sending him a blue print of the electrical installation and general instructions as to our plans.

Hoboken, New Jersey
January 4, 1936

Mr. O. D. Ingall
1500 Morada Place
Pasadena, California

Dear Ozzy:

Enclosed I am sending a copy of a letter of instructions to Collatz, outlining to him some of our plans relative to the ice plant. Any criticisms or suggestions will be gratefully received. Under separate cover I am also forwarding blue prints and specifications of the machinery as they have been accepted by us and purchased by Bill Donnell.

You will notice that the layout has been somewhat simplified and, I believe, a good deal bettered since we last discussed the matter. We kept the engine room down to the size you suggested. We did away with the sub-metering equipment as I became convinced that we could easily estimate the power used by the various units of your company. This saves us about \$200.00.

Mr. Mather has been very helpful and reasonable in helping us with the electrical end of this job. His electrician is going to do the installment work and I think our relationship with Mr. Mather will be mutually advantageous.

We received your basket of fruits and champagne and have enjoyed it very much. Many, many thanks!

The best New Year's Greetings to you and the kids.

Sincerely,

AB:EG
Enc.

Island Service Company

Nantucket, Mass.

Jan. 7, 1936

Dear Al.-

Enclosed find check for 108.00 part payment to Frick Company. Collattz arrived here Jan. 3, 1935 and is living at 24 Hussey St. where Sid Thurston used to live. Collatz seems like a very good man but of course we have plenty of time to find that out.

~~I~~ I will write you later this week as to how we are progressing.

Best Regards,
Bill.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

1201-S

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

(03)

R. B. WHITE
PRESIDENT

NEWCOMB CARLTON
CHAIRMAN OF THE BOARD

J. C. WILLEVER
FIRST VICE-PRESIDENT

SYMBOLS

DL = Day Letter
NM = Night Message
NL = Night Letter
LC = Deferred Cable
NLT = Cable Night Letter
Ship Radiogram

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

Received at 46 Newark St., Hoboken, N. J.

1936 JAN 16 PM 5 11

NK83 16 XC=NANTUCKET MASS 16 437P

ALFRED BORENMAN=

525 RIVER ST HN=

TRANSFORMER HOUSE ELEVEN FEET LONG BY FIVE WIDE BY SEVEN
HIGH COLLATZ RECOMMENDS EIGHT FEET WIDE=

ISLAND SERVICE CO WM DONNELL.

XC No other Telegraph
office where
this message originated

ONLY WESTERN UNION
can carry your message there by
TELEGRAPH. Quickly, accurately

THE QUICKEST, SUREST AND SAFEST WAY TO SEND MONEY IS BY TELEGRAPH OR CABLE

Switch board - by Ed. 1/17/35

band
18" 4'

X

16-16-16-28

call Kehwe
with Bill
call Mueller

January 20, 1936

Dear Bill,

I believe that we have finally reached the point where we can start in with the electrical work. I have written Ralph Floyd and have enclosed a copy of the letter. Maybe you had better confirm the arrangement I made as to the date on which he should commence work.

I have also attached the approved contract for the condensers which has been in my hands for about ten days. This stuff from Vogt will be shipped on to you in the next few days. It will probably go by rail, as a carload, via New Bedford.

The compressor and electrical equipment left New York via New England Steamship Co. on Thursday and Friday of last week. It ought to be in your hands by this time. The bill of lading from Stephen Hall was messed up by the receiving agent at Pier 14. He added a piece to it for some unknown reason and I am told that you will find as a written-in addition

1- crate Compensator .

This makes the number of pieces from them fourteen instead of thirteen. They are certain that they only shipped thirteen to you but if there really happen to be fourteen pieces in the consignment from them, one piece does not belong to us. If only thirteen arrive, according to Stephen Hall, we are getting all that we really should. You may have to straighten things out with the steamboat company which oughtn't be very difficult.

One small switchboard and the sheave for the motor are still to come from Stephen Hall. They will be sent off to-morrow or Wednesday, I am told.

I shall be down, probably with Mr. Moelter, on Monday or Tuesday of next week. From my talk with Collatz, last Thursday, things seem to be going along. I am, however, anxious to see for myself. By this time I hope to have the final complete lay-out drawn up and blue - printed. Moelter is putting the finishing touches on it. He has neglected this job a bit due to the fact that the Knockerbocker Ice Co. is undergoing a reorganization and I guess he doesn't quite know where he is going to stand in the new line-up.

You will have to let Floyd have about the same leeway as Collatz has in purchasing conduit, outlet boxes, wire, etc. You probably suspected this so I apologise for referring to it.

With best regards- see you soon,

Telegram

1/22/36

Island Service Co.

Nantucket, Mass

center to center measurement of shafts
is ~~six feet six~~^{seventy eight} inches. stops
have local blacksmith make
foundation bolts.

Bonemann

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

1201-S

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

(.24).

R. B. WHITE
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CHAIRMAN OF THE BOARD

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Received at 46 Newark St., Hoboken, N. J.

1936 JAN 22 AM 10 25

NY52 8 XC=NANTUCKET MASS 22 955A

DR ALFRED BORNEMAN=

STEVENS INST OF TECH HN=

WAITING FOR SHEAVE SEND DIMENSIONS CHECK ON SHIPMENT=

ISLAND SERVICE CO DONNELL.

XC No other Telegraph
office where
this message originated

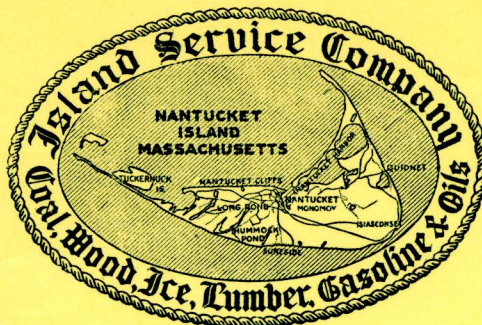
ONLY WESTERN UNION
can carry your message there by
TELEGRAPH • Quickly, accurately

THE QUICKEST, SUREST AND SAFEST WAY TO SEND MONEY IS BY TELEGRAPH OR CABLE

shipped Louisville

1/21/26 - Nantasket

5



Mr. Alfred Bornemann,
525 River St.
Hoboken, N.J.

Nantucket, Mass.

Jan. 28, 1936

Dear Al.-

Dear Al:-
Hope you didn't get seasick this morning as the wind certainly was blowing a good breeze.

Wells.

The wells are down about 40 ft. in depth and the water was up in the pipes within six ft. from ground level. The pull is app. 300 ft. from the ice plant and we have always had plenty of water.

I bought the 2 H.P. motor that we were talking about last night for Twenty-five dollars. It is 3 phase, 60 cycles 220 volts and 1150 rev. per minute.

After thinking about the location of transformers last night, I rechecked this morning and have now decided to put them as you had them on your layout, that is in the plant behind the partition in vault. The size of the vault will be 5' wide by 9 ft. long and 6' high. We will use about 200 cement blocks and can build it ourselves. I don't think it will be very expensive., and taking everything into consideration, fire risk, convenience, etc. it is the best place.

Best Regards,

Bill

Am about
starting my

January 22, 1936

Dear Bill,

Thanks for your letter of the 18th. I telegraphed an answer to the most urgent questions in it. I shall, however, confirm the telegram.

The center to center dimensions of the shafts of the compressor and synchronous motor is six feet six inches. This dimension is correct on the larger of the two drawings Moelter sent directly to you from his office Monday. The smaller of the two drawings - i.e. the one showing the foundation measurements - gives a dimension of six feet eight inches. This is wrong.

You can get the foundation bolts made by a local blacksmith. The sizes are given on the foundation drawings. *Make the heads large enough.*

It is too bad you ordered the compressor parts directly from York. The price seems terribly steep. *Too bad you were at their mercy.*

The sheave is coming down to-night or to-morrow with the pressure regulators from Stephen Hall.

I answered most of Collatz's questions over the telephone the other day, i.e. last Thursday. *Other things can be discussed Monday.*

Vogt has given me quite a disappointment. They originally promised to have their equipment ready to ship on the 20th of this month but to-day when I tried to check on their promise they plead unavoidable delays and have postponed the shipment date until Jan 31st. You will therefore not receive this stuff until around the 5th of Feb. This will mean that we can start some work on the ice house to keep everyone occupied.

We can hash this out on Monday as I expect to arrive on the Island that afternoon. I may have to leave Tuesday morning early so if possible try to keep the evening free so that we can work awhile together in case we can't finish everything during the afternoon. *Moelter is coming along -*

I've enclosed the approved Frick contract for which they would like to have an acknowledgement from you.

See you soon, Bill, till then - best regards,

Feb. 4, 1936

Dear Bill,

God knows when this will reach you for according to the New York papers you are completely isolated. I've attached a letter from Vogt and one from Frick. Concerning the Vogt one there is very little that you can do except wait. If you do not approve of the arrangements suggested by Borgstedt of Frick we might still be able to do something about it. I do not know what an order bill of lading is and I have intended to call Borgstedt up to inquire about it. I have not gotten to it to date but will try to do so tomorrow.

Did any starting box go with the motor you bought? If not I can get one when I order the rest of the motors. I don't suppose Floyd has been able to get to the Island as yet. If he does happen to be there you might ask him to give you a price on

2- new LHP 900 RPM 3 phase 60 cycle 220 volt squirrel cage induction motors with bases

and 2- new GE type CR7006 magnetic switches (or a similar other make) for use with above motors and remote control.

I have a couple of prices from people around here but if he is just as cheap we might as well let him build up his business.

I've a quotation on a 2 can filler - \$105 - do you think that they are necessary. Remember that you will have to scrap it if you modernize your harvesting equipment. On the other hand if three men are going to be able to harvest 20 tons per day we may be able to leave things as they are. The present scheme will make them work at the following rate.

$$\frac{\text{daily time during which ice is pulled}}{\text{number of cans in twenty tons}} = \frac{21 \times 60}{20 \times 7} = 9 \text{ min/ can}$$

With a two can lift this means 18 min. for each harvesting operation. Moelter claims that this would not be rushing things. What do you think? How much could you cut down this time by using a can filler instead of the gadget you are at present using? I'd try it without the can filler if I were you. If we find that we have to save just a minute or so in each harvesting operation we can always install one. I'll get you one if you really want it.

Attached are also some instructions for Collatz regarding the thawing tank.

Best regards,

al-

Feb. 9, 1936

Dear Bill,

Enclosed are five more blueprints. There is a corrected piping diagram for the brine coolers and surge tank - this supersedes the one we gave Collatz here in Hoboken. There is also a piping layout for the connections between compressors (new, old and future), condensers and the rest of the plant. There is also a Knickerbocker layout for a storage house from which Collatz can get some dope as to how he can revamp the present ice storage house floor when he gets around to it.

The drawing from the Gifford Wood people will give you an idea as to how the storage house conveyor will work. The thing that disturbs me is that you are not going to be able to load more than three or four cakes of ice on the belt without moving it along a bit. Also, except for one cake, you can only load ice in the back of the house. This discussion applies to the corrections I've made on their drawing. They had the dimensions wrong on their original blueprint. Woelter's big drawing "Location of refrigerating equipment" with my yellow notes gives you an idea as to how we will design the chute if we leave things as they are, employing a conveyor to take the ice from the lower storage room up to the platform level. This is really a mess and whoever designed this originally ought to have their pants kicked!! Your ice men, if we carry out our original plans, will have to do a lot of running back and forth for I suppose most of them take more than three or four cakes at one time.

I should like to suggest this solution to the problem. That ~~is~~ is raise the floor of the storage house up to the platform level and then install your conveyor and make it really useful. Your present ice storage, not including the ante-room, had a capacity of about 280 tons. The new ice storage facilities, including the ante-room space, as we have redesigned it would permit you to store about 30 tons more. By raising the floor of the storage house you would sacrifice one 22" tier of ice or about 40 tons of storage capacity. In other words your present storage capacity would be lessened by about 10 tons. This loss is balanced by the ability to handle your ice, i.e. get it ~~out~~ of storage on to the platform, much more efficiently. I do ~~not~~ believe that it would be very expensive to do this. The old floor could be taken up in sections, 20" of cinder fill laid down (see Knickerbocker Ice Co. plan) and the floor could be replaced. Or concrete beams could be poured and the old floor laid on top of them. Think it over Bill, and see if you don't agree with me that it might be the cheapest thing to do when everything is taken into consideration.

I should like to have Collatz send me the center to center distance between cans in the freezing tank. He can also go ahead on the basis that the center to center distance between motor and exciter is 18".

Are you still frozen in? The papers have ceased to be interested in your plight.

Best regards,



Island Service Company, Inc.

Mr. Alfred Bornemann,
525 River St.
Hoboken, N.J.

Nantucket, Mass. Feb. 18, 1936

Dear Al.-

Reference to your letter Feb. 9, 1936.

The center to center distance between cans in the freezing tank is 15".

I think we had better let the ice storage floor go for a while, that could be a project for next fall. It would be nice to have the floor on equal level with the anteroom but I think it will be quite expensive. I have talked this over with Collatz and we are going to enter the storage house with the ice chute high enough so that if we do raise the floor we will not have to make any changes there. I can tell you more about this when we empty the house and can look it over thoroughly. We have no cinders and there isn't any on the Island and I don't know just how the concrete floor is put down in the house.

We haven't had a boat here for nine days as the ice has been quite thick and the last two days we have had fog and as the buoys are out of position they don't dare come down. The Matthias Vinyard broke a rib and they have had to get the New Bedford out and as I understand it, The Insurance officials have told them to take it easy. We were quite fortunate in getting the condensers and coolers here as we would have been out of luck and now we are in need of some fittings. The men are still busy but we have got to have a boat in the near future.

That house of Rings at Eel point has a garage, two bedrooms, bath room large kitchen, and living room. Land court title, 126 ft. shore front, and 500 ft deep, and he is asking 6000.00 but of course that is out of the question and he knows it. You could ~~xxxx~~ dicker with him and knock off a couple of thousand without any trouble. It has a nice well and electric pump. He is also asking 300.00 for summer rental.

Floyd hasn't had a price on the motors yet but Wayne gave me the following, Normal Start Current, normal Torque, General purpose Squirrel cage Motor, Wagner, -1 H.P. 3 phase 220 volts, 900 R.P.M. 69.00 Motor, base and pulley. Two weeks delivery. Mag. Sw. Remote control 15.00. each station 1.80. Mag. sw. local control 16.20.

Normal starting current. Normal Torque. General purpose squirrel cage Motor Type K. General Electric. 1 H.P. 3 phase 220 volts 900 R.P.M.

Sleeve bearing.

Ball Bearing

67.00 Motor.

71.00 Motor

6.00 Base

6.00 Base

F.O.B. Nantucket.

2.00 Pulley

2.00 Pulley

75.00

79.00

C.R. 7006 Size 1 Magnetic switch 17.00 each push button stations 2.00 each

I will send Floyds price as soon as I get it.

Best Regards, Bill.

1500 MORADA PLACE
PASADENA, CALIFORNIA

Feb. 17 1936

Dear Al:

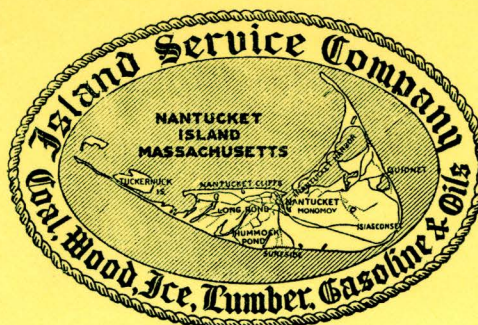
I would have acknowledged the blueprints which finally arrived but heard you were going down to N. and was hoping that you would write me the results of your visit. I can see why the Knickerbocker Ice Co. closed down so many plants this year, probably still waiting for plans from their engineering department. Of course it doesn't matter in NY but has cost us considerable having things drag thus. However from what I hear the new man is using his head and will be able to overcome the engineering mistakes. It sounds as if the compressor was sure enough second hand. I think we will be able to solve the ice house problem with a stacker and some endless chains. I wonder how things are coming as to keeping within the estimates. How was the new erector engineer enjoying the isolation. Too bad you and Moelter did not enjoy the present freezeup. It would have been an experience for you and they are having lots of skating and iceboating.

Just at present am very busy with yearly reports and income tax matters. We did very well last year all things considered. Less sales but better business methods. Hope next year will show the wisdom of all these new expenditures. Let me hear from you soon if you can thaw out enough to write. Cheer up, Spring will soon be here. We miss the old folks a whale of a lot. Very quiet Aunt seems well but being pretty quiet.

Adios,

O.D.I.





Nantucket, Mass. Feb. 8, 1936

The shipment from Vogt is in New Bedford and we have paid for it on a sight draft as per the agreement. It will be all right to pay Frick as they suggest as I guess it is the same as a sight draft.

I think we better have the exciter drive as soon as possible so that if Floyd wants to start the motor etc we will be all set for him.

I am working on that Eel point business for the house but Ring doesn't seem very anxious to sell. I have asked him for a price but he didn't know just how much he wanted and I didn't push him. He rents them summers and last year did quite well. The small house that he had there, he has put on quite an addition. I will get a price probably in a week or so.

Best regards,
Bill.

Feb. 20, 1936

Dear Ossy,

Received your letter of the 17th and it flamed my smouldering intent to write you into action. By regular mail I am sending you a few more blue prints. Two are supplements to old ones and the third is a new one.

Down at Nantucket I found everything going smoothly. Collatz knows his job and seems to be very dependable. I don't believe that he has had to rectify any "engineering mistakes". He is a good mechanic and has had a world of practical experience so he ought to be very useful to you. Collatz was still reserving judgment as far as the isolated Island is concerned. His wife, he tells me, is busy and the boys of the Isco seem to have received him with open arms.

I spent considerable time with Mather and the electrician, Floyd, and I believe that this end of the job will progress smoothly. We have sent down specifications regarding wire sizes so there ought not be any confusion here.

The check between estimates and cost looks something like this.

	Estimate	Cost
Compressor	840	840 - 160
80 HP Motor	750	840
Electric Control panels		435
V-Belt Drive	160	160
2 Condensers	1028	1028
2 Coolers	1180	1180
2 Agitators & 1 Surge Tank	549	432
* 2 Motors & Drives for Agitators	175	175
* 1/2 ton Hoist	285	300
1 Air Blower Motor		25
* 1 6 tier Ice Stacker		475
* 1 conveyor		550
* 2 7.5 HP 200 gal./min. pumps		500
* 1 Core pump motor		
* 1 two can dump and can filler		285
* Cold Storage Doors		190
* Incidental V-belt Drives		

4792	(Oct. 25	7565	(Oct. 25
	5000)		6500)

We are about 1000 dollars above the estimate of Oct. 25th. This is about half due to extra equipment not included in the previous estimate. The starred items have not as yet been purchased.

The ice house problem is the worst one that we have to face. I discovered on my last trip that the floor of the ante-room was

22 inches higher than the storage house floor. This means that 12 feet of the conveyor length, i.e. that part of it inclined to take the step, is above the storage house floor and is therefore inaccessible for loading ice. About four cakes may be loaded onto the rear end of the conveyor without having to start it up and only two at the most may be loaded onto the front end (at the ante-room elevation) without having to start it up. A two foot pit must be dug in the floor to contain the return chain. I have suggested to Bill that we make the floor of the Ice Storage House level with the ante-room floor. This would save us the trouble of digging a ~~fr~~ trench in the old floor and would greatly simplify the conveying of ice from one part of the storage space to another. It would also, I feel sure, cut down on the time required to move ice from storage onto the platform. With a level floor ~~xxxxxxxxxxxx~~ eight cakes could be loaded onto the conveyor and then by a touch on the control button delivered onto the platform. Even with the higher floor we shall be able to build up 6 tiers of ice in the storage house. Our total capacity would be lowered from 310 tons to about 270 tons. At present it is about 280 tons. Bill thinks that this can wait over till the fall and I shall write him to tell him that I am afraid that he will not realize the full benefits of the conveyor unless he is going to be able to load it at one level throughout the whole ice house. One of the main difficulties seems to be that there are ~~no~~ cinders on the Island to use as fill. How about clam shells, etc.?

I'll have to convince Bill that the inclined conveyor is going to be a nuisance and confusing to all who use it.

There is little news from here. You've probably read about the unusually severe winter we are putting up with. Dad goes to Europe with Mother the beginning of next month. I am frightfully tied down with a new course I am experimenting with- so much so in fact that I have only been skiing once. I was glad to hear that you, your family and Aunt Florence were all well! Remember me to them all.

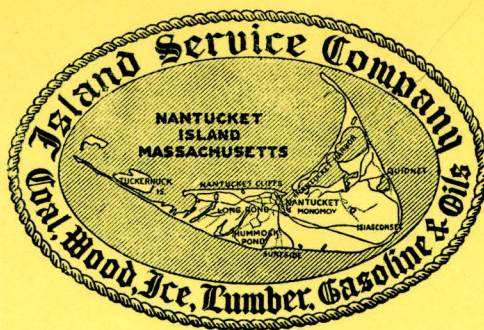
I have been negotiating with Ring for his place on Eel Point but he wants 6000 for it and I would pay 1500. I suppose I'll have to wait for a fire sale in order to elbow myself onto any Nantucket property.

Well "abwarten und Tee trinken" as the German's say- Keep well and give me your opinion as to the changes I have suggested for the ice house.

Sincerely,



Telephone 10



Island Service Company, Inc.

Nantucket, Mass. Feb. 22, 1936

Mr. Alfred Borneman,
525 River St.
Hoboken, N.J.

Dear Al,-

What has happened to the Frick order, it is holding us up some now.
Where is the special 2" Valve (long stem).

Floyd has given us a price on Two 1 H.P. G.E. motors (Second Hand but guaranteed for 1 yr.) as per your specifications complete F.O.B. Nantucket 62.50 each. Waine price and Floyds on new motors about the same.

We had a one H.P. motor here that Collatz is going to try out on the Core pump and thinks it might do.

The work here is going along O.K. but we are reaching the slowing up stage now ,cutting pipe etc. Floyd has made some changes on the board but I am going to have him give us a written explanation of why be fore he leaves.

We are still having trouble with the ice and I haven't been able to get our gasoline boat out of here as yet. It has been some winter here.

Best Regards,

Bill.

I have ordered five thermometers from York for the various places that Collatz wants them.

ALEXANDER MACOMBER, PRESIDENT

CHARLES R. PRICHARD, JR., TREASURER

WILLIAM L. MATHER, MANAGER

Nantucket Gas and Electric Company

NANTUCKET, MASS.

February 25, 1936

Dr. Alfred Bornemann
Department of Chemistry
Stevens Institute of Technology
Hoboken, New Jersey

Dear Dr. Bornemann:

In connection with the three-fifteen kilowatt transformers which are to be located in the Ice Plant of the Island Service Company, the purchase price of \$60.00 each is offered you. These were purchased new in 1928 and are in very good condition. I believe this price to be lower than you might obtain elsewhere and if agreeable, please acknowledge.

Very truly yours,

NANTUCKET GAS AND ELECTRIC COMPANY.

W. L. Mather

W. L. Mather
Manager.

WLM:D

Stephen Hall 2/28/36

~~2 20 K.V.A. Mather~~

15 KVA 2200 T 220

new \$150 ea.

\$165 ea for G.E.

March 7, 1936

Dear Mr. Mather,

Thank you for your letter of Feb. 25th. The price at which you have offered to sell us the transformers which are at present located at the Island Service Company is agreeable to me and I have informed Bill Donnell, with this same mail, to that effect. This price is sixty dollars for each of the three fifteen K.V.A. transformers.

I have had many interesting discussions based on the experience and functioning of the Nantucket school system as you disclosed it to me. I hope soon to be able to talk personally with you about it or least to have time to write you a longer letter ~~mixing~~ describing the attitudes I have encountered when I proposed a solution similar to the one we discussed on our trip to Boston.

With best regards, I remain,

Very truly yours,

(Alfred Bornemann)

March 7, 1936

Dear Bill,

I received the check and signed orders for Vogt and have fired them on the ~~XXXXX~~ New York office. Frick sent off the Surge Tank and Agitators Tuesday of this week and I believed they intended to include the valve you ordered directly from them in this shipment.

I have enclosed a letter I wrote Mather in answer to the offer he made us regarding the 3 - 15 KVA transformers we might buy from them. As you probably know his price was 80 dollars apiece. I have checked with Stephen Hall on this matter and they tell me that new ones will cost between 150 and 165 dollars apiece, depending upon what kind of a discount you can get from the General Electric Company. Second hand ones would not be cheaper than 40% of the new price and probably nearer 50% as there is quite a demand for this size. Mather's price is therefore fair and I have told him that I would recommend their purchase to you.

The one HP motors for the agitators I shall order directly through Stevens' purchasing dept.. They will be delivered to you and I shall pay through the Institute for them. You can then reimburse me when the time comes. Is this agreeable to you? I hope so as I have put in the ~~XXX~~ order.

I am getting together estimates on various solutions concerning the alterations to the Ice House floor. I'll send them along for your ~~XXXXXX~~ consideration soon.

Regarding the doors - I would suggest that you use the one door you have on hand for the entrance to the Storage House from the Tank Room. The new doors we shall use for access to the platform.

Were my sketches for the chute into the Storage House sufficient for Collatz to proceed on or does he want a more detailed lay-out?

11' 3" is the clearance in the present storage House? Where did I get 14' from?

This is all for the time being. Do you think I should plan to come down around Easter? Best regards to you all,

Sincerely,

Feb, 26, 1936

Dear Bill,

I received your letters of the 18th and 22nd. Many thanks! I was glad to hear from you that the work was moving along. I hadn't heard from Collatz for so long that I was beginning to wonder as to the progress he was making. No news is good news and I figured that I'd hear pdq if anything went wrong.

I heard from O.D.I. and sent him a short report as to how the purchases were lining up with the estimates I had made. I also told him about my suggestion concerning the raising of the ice house floor. I appreciate your stand that it would be a good job for next fall but I am afraid that you overestimate the additional cost involved. The conveyor is going to need a two foot deep trench which is going to cost more to dig and line than it will cost to build up ~~low~~ partitions from your present floor to the anteroom floor level on both sides of the conveyor chains. You don't have to use cinder fill although maybe you could get them from the Nantucket askman. It would suffice to support the new floor on wooden beams. It is going to be darn awkward and time consuming to get ice onto the platform unless your storage room is at the platform level. This will be particularly so if we are going to have the drivers get their own ice as we had planned. I am enclosing all the dope on the conveyor and a ~~ti~~er machine from the Gifford-Wood Company who are apparently the only makers of conveying equipment. Their tiering machine appeals to me very much and happens to be a little cheaper than the Shepard machine. What do you think of it? Please send me back all this information after you have made a decision regarding the level of the icehouse floor.

I have also enclosed the propositions referring to the can dump and can fillers. The can dump will fit into a space of 41 inches which is the clearance between ice house wall and freezing tank. Will you please have Collatz confirm this and also have him measure the head room in the present ice house and ante-room and send it to me. You may sign this proposition and send it back to me if you will be so kind.

The two inch, long stem valve you will have to order directly from Frick who are the only people carrying such an article. Due to a misunderstanding this thing slipped my attention. Please order directly from

Mr. Henning Borgstedt, Mgr.

Frick Company

370 Lexington Ave, N. Y. City the following.

One - Two inch stop valve with stem extending approximately 40 inches.

Price 33.15 dollars- f.o.b. Waynesboro, Penn.

Borgstedt was to call me today regarding the surge tank etc. But, of course, he did not do it and I couldn't get in touch with him. They had

a scrap

a good deal of trouble with Moelter regarding the plans they wanted him to accept - therefore the delay. The matter was finally ironed out to our satisfaction and the stuff ought to be ready by now.

I can get the motors for 48.75 each through the Institutes purchasing dept. I shall do this and send you the Bill when it comes to me.

Will you please have Eugene Collatz look over the storage house doors and see if he thinks any of them ~~might~~ might be used. New ones will cost us 190 so let's look the ones we have over carefully first. We need two big ones. The small ice passing doors we shall have to buy.

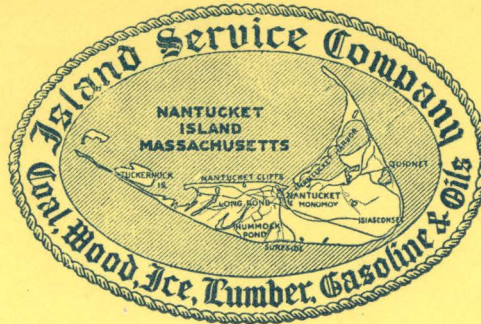
I'm still looking for a second hand hoist and the quotations on pumps are not all in yet. There isn't an 200 gal./min., bronze fitted centrifugal pump which will work against a dynamic head of 85 ft on the Island that you can pick up, is there?

Try and use the 1HP. Motor which you have on hand for your core pump. If it isn't large enough we can always get a 2 HP one quickly. Collatz had better send me dope for the drive so that I can include that in the order for drives for the small motors.

That's all for the time being. I've attached a personal note regarding the Ring house.

Keep well Bill. Give my best regards to the boys and Collatz,

Sincerely,



Island Service Company, Inc.

Nantucket, Mass. Feb. 29, 1936

Mr. Alfred Bornemann,
525 River St.
Hoboken, N.J.

Dear Al,-

Reference to ice house floor. I have heard from Mr. Ingall and he suggests a plank floor. We will not be ready for any ice house work until April 1st or thereabouts and I suggest holding up any order for the conveyor or tiering machine until such time as we can get into the icehouse and see exactly what we are up against. At that time we can put on more men and get the floor raised etc. before the ice trade picks up.

Enclosed find the signed contract with check for Henry Vogt Co. for can dumper and filler, and also information from Collatz.

I am ordering the Two inch stop valve to-day as per your instructions. We will be able to use one of the cold storage doors that we have here. There is not a 200 gallon pump that I can find around here.

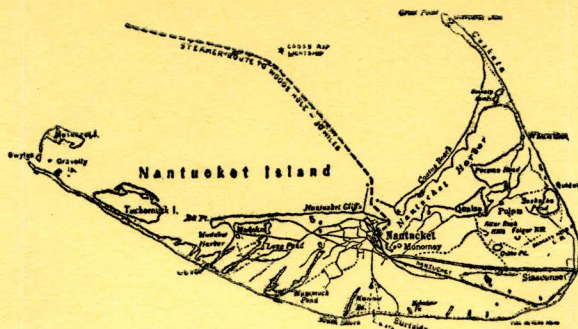
The motor that we have for the core pump is two horse so we are all set, Collatz has had it hooked up and it works fine.

I will keep in mind anything that looks good out Eel point way and let you know.

The work is going along all right in the Plant and I think we are quite lucky in getting hold of such a good worker as Collatz.

Best Regards,
Bill.

Coal,
Lumber,
Wood,



Ice,
Gasoline,
Oils.

Island Service Company, Inc.

Henry Lang, President

O. D. Ingall, Treasurer

Charles B. Hammond, General Manager

Old South Wharf,
Telephone 10.

Pasadena, Calif. March 18 1936
Nantucket, Mass.

My dear Al:

The news I get from Nantucket re the ice plant is disquieting to say the least. There seems to be some confusion due to Moelter's plans not being very understandable. I told Bill to call you or M. whenever they got stuck like that and not to rely on mail. Then the electrical end seems to have had an "out" in it requiring further work that cost \$300 extra. Also my understanding was that we were to get the electrical material thru you or M. at nearly wholesale. The prices of Waine, the local man are absolutely unreasonable. His bill for one month was apparently \$1000 for that end alone. It sounds as if we were going to overrun on our estimate very badly. I have not been able to get an estimate as to when the job will be finished and am beginning to worry whether we will get going in time to take care of our early spring trade. I would appreciate a letter from you as to what you know about the matter.

I understand that Emile and your mother did not get off until later than they expected. I surely hope that they don't stay too long for it looks like Europe was liable to erupt at any moment. I'm damned glad I am on this side of the ocean. Your father had better have stayed here and come out and done the painting job I offered him out here.

I presume that you are high and dry up on the heights but it looks from the papers as if the East was a very wet place just now. I am planning to come back the first of May with Aunt and hope that you will use your influence to have the weather back to normal by then. I am afraid I could not stand your rugged climate any more after being out here so much. We are having regular summer weather just now.

Lets hear from you soon, please. Regards to the family.

Sincerely,

O.D.I.

San Antonio,
Texas.

Sir,



Number,
March.

Dear Sir,

Island Service Company

San Antonio, Texas

San Antonio, Texas

March 18 1936

My dear Sir:

The news I get from Hantucket is the ice plant is dis-
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will use your influence to have the weather back to normal by then.
I could not stand your rugged climate any more after being
out here so much. We are having regular summer weather just now.
Write hear from you soon, please. Regards to the family.

Sincerely,

C.D.L.

BOND

949584

Mr. William Donnell
Island Service Co.
Nantucket, Mass.

~~Please call Hoboken 3-0222 R~~
~~with Collaty this evening~~

Will you and Collaty
telephone me this evening.
regarding agitators
Q

size of ice cans Walter 3/10/36
22 $\frac{1}{2}$ x 11 $\frac{1}{2}$ x 45 outside
measurements.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

1201-S

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION (26)

R. B. WHITE
PRESIDENT

NEWCOMB CARLTON
CHAIRMAN OF THE BOARD

J. C. WILLEVER
FIRST VICE-PRESIDENT

SYMBOLS

DL = Day Letter
NM = Night Message
NL = Night Letter
LC = Deferred Cable
NLT = Cable Night Letter
Ship Radiogram

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

Received at 46 Newark St., Hoboken, N. J.

1936 MAR 10 AM 7 29

NB37 69 NL SSTC 70 XC=NANTUCKET MASS MAR 9

DR ALFRED BORNEBANN=

525 RIVER ST HN=

LOCATED COOLER ACCORDING TO YOUR PRINT 12-5-35 SHOWING TWENTY INCHES FROM END OF TANK TO FRONT OF PROPELLOR HOUSING PLUS 5 1/2" TO CENTER OF PROPELLOR FRICK AGITATORS CAME THROUGH 16" TO FRONT OF PROPELLOR HOUSING PLUS 5 1/2" TO CENTER OF PROPELLOR SHORT 4" IMPOSSIBLE TO MOVE COOLERS LONGER SHAFT AND THRUST COLLAR NEEDED=

ISLAND SERVICE CO DONNELL.

Finish mill exchange shafts + we will have to buy a 4" thrust collar from them -

XC No other Telegraph office where this message originated

ONLY WESTERN UNION can carry your message there by TELEGRAPH. Quickly, accurately

THE QUICKEST, SUREST AND SAFEST WAY TO SEND MONEY IS BY TELEGRAPH

1500 Morada Place
February 24 1936

My dear Al:

I don't quite see the "discovery" about the ice house floor being lower than the anteroom.. Both you and Muelter had to step down when you went over the icehouse from the ante room and I have a fair recollection of discussing that difficulty which we have always had. I was assured at the time that the "up and over" could be easily taken care of by an endless belt or carrier. My confidence in an "engineer" being so great I thought it solved long ago. It still seems as if a carrier on a slope the length of the house would bring it up to the ante room and shorter carriers could be arranged to shoot it out. I do not favor filling to level of anteroom, because.

1. We have none too much storage room just at present and I hate to lose any.

2. The cost of fill would be a large item and there would have to be an insulated floor put in at an additional large cost.

As a suggestion the carrier could be built up level with the ante room and the stacker used to hoist the lower layers up to it, the upper layers will require the use of the stacker to lower to the carrier in any case. A compromise also would be - if we could afford the loss of storage involved in having a one level floor - to floor the ice house with plank on posts. That would have to be worked out as to costs.

Perhaps when the new plans come I can think something up but I feel sure that we can work it out some way. I will study it out anyway. Until the plant is in working order we cannot tackle the icehouse very much anyway as we have to have storage until our machines can be making ice again. By the way have you any idea as to when that will be. I imagine the cold weather has slowed things up and the freezeup made shipments slow.. Are we going to be ready by spring?

Why don't you rent the farm house at Shawkemo from Aunt with privilege of buying? I think she would give you a good deal on it and you could then see how you liked it and more to the point how your family liked it. Why Madaket? I think the East end of the Island is much to be preferred myself. The Callwitzs used to run across country to the beach and it's a nice beach for children. I think John Ring paid more than \$1500 for his place, Manter could tell you, and John never sells at a loss.

Well since February is now on the wane I really feel that Spring is just around the corner. It won't be long now before I will have to be thinking of coming East again as I want to be early this year and leave early. As my plans now lay I will come back in May and let the children follow in June at their leisure. They claim they are going to fly back. I may come back by rail with Aunt. Then in August we three will go back by Grace Line and see something of South America on our way. However plans change a lot with future needs and I am not counting too heavily on it. But I do think I can be more valuable getting things started in all our new lines than later in the season.

Don't work too hard, you can only live one life and it's hard to have fun when you have passed the half century mark.. the edge is off then. Will be glad to see you when I arrive.

Sincerely,
O.D.

1500 Morada Place
February 24 1936

1997 LAS LUNAS STREET
PASADENA, CALIFORNIA

My dear Al:

I don't quite see the "discovery" about the ice house floor being lower than the anteroom. Both you and Mabel had to step down when you went over the icehouse from the ante room and I have a fair recollection of discussing that difficulty which we have always had. I was assured at the time that the "up and over" could be easily taken care of by an endless belt or carrier. My confidence in an engineer being so great I thought it solved long ago. It still seems as if a carrier on a slope the length of the house would bring it up to the ante room and shorter carriers could be arranged to shoot it out. I do not favor filling to level of anteroom, because.

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Don't work too hard, you can only live one life and it's hard to have fun when you have passed the half century mark. The edge is off then. Will be glad to see you when I arrive.

Sincerely,
O.D.

March 20, 1936

Dear Bill,

Enclosed are the proposals from the Penn. Pump and Compressor Company for two 200 gal./min. water pumps and a circular describing these pumps. All you need to do is send in an order. No down payment is required.

I have also attached a clipping from this morning's Times. I'll try to get as much of the stuff sent down to you as possible. You may find some helpful suggestions.

We'll have to do something regarding the Waine bill. Will you please ask him to supply us with an itemized list of material he supplied for our job. You might also get a similar list from Floyd. If you will be so good as to send me copies of these lists I shall get our purchasing agent to check over them and then we shall know how much we have been overcharged. From here I would suggest that you then suggest to Waine the advisability of making say only ten percent instead of 30 or 40% on material supplied from such a good customer. I imagine that he will be reasonable particularly as he has been charging you approx. \$10 per day for his services whereas six or seven would probably have been adequate.

Will you please have Eugene Collatz send me the center to center dimensions between the agitator shafts and the 1 hp motors which are to drive them. This is just a reminder.

The bills for the motor bases have just come in. I would suggest that you send me a check for \$200 from which I shall pay for the motors, bases and switches and credit you with the remainder against expenses. I shall send you copies of the bills so that you can keep your accounts straight.

Moelter is working over the various propositions we have discussed concerning the ice house floor. I hope to have this in the next few days and after digesting it will forward it on to you.

Moelter may come down with me on the third of April - arriving on the fourth. We'll leave again Sunday afternoon.

For my records I should like to have an itemized account of the costs of labor, material etc. which you have encountered in rebuilding the ice house and plant. The next time one is made out will you supply me with a copy?

Best regards-

Sincerely,

March 25, 1936

Dear Bill,

Enclosed are two additional sets of quotations- One is from the Jamison Cold Storage Door Co. concerning the doors you will need. These are satisfactory and you can order them either directly from them or through me.

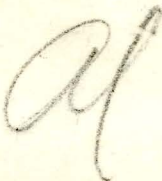
The other quotation is from the Euclid Crane and Hoist Co. If you have already ordered the hoist directly from the manufacturers you can ask them to change your order to conform with the additions listed below.

1. You prefer (at least I recommend that you do) the hoist with trolly mounted on top of the I-beams. This costs 15 dollars more but is a more substantial arrangement.
2. You need the wire, insulators, bolts, supports, collectors etc. which they will supply you with for an additional fifty-eight dollars. As I suggested on the letter the Euclid people wrote me Eugene Collatz should decide whether he wants the wires to run vertically or horizontally. Be sure, though, to let me or the Euclid people know of his choice.

If you have sent the order on to me to forward I shall inform them of the additions recommended above and you can send me a supplementary order.

This seems to be all for the moment- There is a letter and a booklet attached for Eugene Collatz. Will you kindly give it to him.

Best regards,



March 22, 1936

Dear Bill,

I'm answering Collatz's letter through you as there are a couple of enclosures which I wanted to forward on to you. and this way I can kill two birds with one stone.

The first one is a confirmation from Vogt for the Can Dump and Can Filler order. They promise to get this off to you by April first but I shall try to get a drawing of these two items down to you beforehand so that Collatz can get things ready for them.

The second enclosure relates to the hoist which we have still to purchase. I have been negotiating with the Euclid people in order to include in the order the wire, collectors and insulators we shall need in installing the hoist. These things will, however, not take long to deliver so you can O.K. this order now and we can get things started. I shall try to get a quicker delivery on this item than the one they have specified.

This answers all of Gene Collatz's inquiries regarding the material which is still lacking with the exception of cold storage doors and sundry drives. Both these items will be attended to during the next day or so and to save time I shall order the drives directly and send the bill on to you. You should have the drives in a week and as the doors are standard articles delivery should not take long in their case.

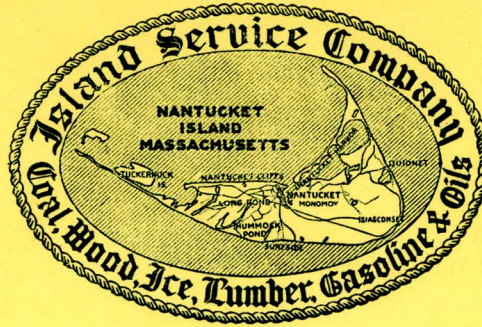
Regarding the insulation, will you please ask Gene to measure out the lengths of pipe, noting size and lengths and fittings, on the low pressure side so that we can get bids on the insulation work. I don't believe that we should bother to buy new insulation for the connections from the standby unit to the new freezing system. We shall, most probably, never have to use this, so why go to any expense regarding it.

I shall call Frick to-morrow and see what is holding them up.

Both of you keep in touch with me if any questions arise.

Best regards to all,

Yours,



Island Service Company, Inc.

Dr. Alfred Bornemann,
525 River St.
Hoboken, N. J.

Nantucket, Mass. March 24, 1936

Dear Al.-

Ans. your letter Mar 20, 22, 36

I have sent in the signed proposals to Penn Pump and Compressor Company. I noticed that these pumps turn up quite fast, but I suppose they will work out all right. I gave the clipping to Sid as he is our refrigerator salesman.

I talked with Waine about his bill and has charged us according to his price book but is going to issue us a credit when the job is finished. The credit will amount to from 5 to 7 %,he says that he is not making to much on what he has sold us but we can go into that when you come down. He has charged us 90 cents per hour for his time and 80 cents an hour for his man which isn't bad at all.

Gene has sent you the center to center measurements of agitators shafts and motor shaft. I am enclosing check for 200.00 as per your request. When you come down I can give you what you want in reference to labor, materials Etc. that we have used in the plant.

I am enclosing a drawing in reference to the electric hoist that Gene has made in reference to some changes that should be made as to make things come better when the ice is to be lowered into the dip tank. I have signed the proposal but watch out for the changes.

I have all ready asked for prices on insulation and The United Cork Co will install etc for 409.52 and the Mundet Cork Corp will do the same work for 343.00. I will enclose just what we asked for. I haven't heard from Armstrong as yet. We didn't figure any cork for the hookup from the I.R. to the new installation.

We have received the 40" stem 2" valve from Frick.

W. have a couple of Coolers here in stock and plan to sell this kind. Sid and ~~me~~ I have been up to Boston and got in touch with the Boston Ice Co. and went down to their showroom where they handle Coolers, McKee and Vitale and they think that the Cooler is more substantial and better advertised. They are selling quite a number, in fact sold three while we were there.

Best Regards,
Bill.

This is a copy of the letter that I sent March 16, 1936
to United Cork and Mundet Cork Corp. and Armstrong Cork Co.

United Cork Bids 409.52
Mundet Cork bids 343.00
Armstrong Cork ? haven't heard as yet.

We would like a price on the following installed at our ice plant, the
cork to be of brine thickness with the exception of surge tank that to
be of 3" lagging. We would like to hear from you soon as we would like
to have this job completed by April 10th.

1--- 3" flange angle valve bolted bonnet
4--- 2" " " " " "
1--- 2" " globe " " "
2--1 1/4" screw angle valves bolted bonnet
1---1" " " *****
1-- 3" screw tee
1-- 2" " "
1-- 1" " "
3-- 3" " ells
10 --2" " "
20ft. 3" covering
52ft. 2" "
2 ft. 1 1/4 covering
Surge tank 20" outside diameter by 8' long 3" lagging.

Price on the following we will install
40 ft. 2" covering
40 cu. ft regranulated cork.

March 25, 1936.

Island Service Company,
Nantucket, Mass.

Gentlemen:- Attention: Mr. William Donnell, Jr., Secretary.

We wish to thank you for your kind order of the 23rd inst.
covering the two (2) Water Pumps.

We have entered this order on our Plant at Easton, Pa., who
will forward you direct foundation prints covering these units.

The Pumps will be shipped by freight via Lehigh and New
Haven. If any special routing instructions are required kindly
advise.

Again thanking you for this order, we remain,

Very truly yours,

GAP:AM

PENNSYLVANIA PUMP & COMPRESSOR CO.

Copy to Dr. Borneman.

Many thanks Al

Try and get yourself on the telephone some day

G. A. Parker P.E.

*↑
Martin & I passed the Engineering
License Exam. but we have not
yet received our numbers Ha! Ha!*

gap

PENNS LVANIA

PUMP AND COMPRESSOR COMPANY

OF EASTON, PA.

AIR COMPRESSORS VACUUM PUMPS CENTRIFUGAL PUMPS CONDENSERS

NEW YORK OFFICE

BOWLING GREEN 9-3459

ADDRESS REPLY TO

21 STATE STREET

NEW YORK CITY

February 25, 1936.

Dr. A. Bornemann,
Stevens Institute of Technology,
Hoboken, N. J.

Dear Al:-

I am enclosing herewith our proposal NY-1218-36, in duplicate, covering Centrifugal Pumps on which you kindly gave me the specifications yesterday.

Trusting that our proposition will be found complete and satisfactory, I remain,

Very truly yours,

GAP:AEN
Enc.-Proposal.

PENNSYLVANIA PUMP & COMPRESSOR CO.

G. A. Parker

Call Parker on starting types -

+ 4 80

PENNS LVANIA

PUMP AND COMPRESSOR COMPANY

OF EASTON, PA.

AIR COMPRESSORS VACUUM PUMPS CENTRIFUGAL PUMPS CONDENSERS

NEW YORK OFFICE

BOWLING GREEN 9-3459

ADDRESS REPLY TO

21 STATE STREET

NEW YORK CITY

March 16, 1936.

Dr. A. Bornemann,
Stevens Institute of Technology,
Hoboken, N. J.

Dear Al:-

Confirming telephone conversation, we are enclosing herewith, in duplicate, revised proposition NY-1235-36 covering two Pumps, with Motors and Push Button Starters.

Thanking you for your favorable consideration of our product, we remain,

Very truly yours,

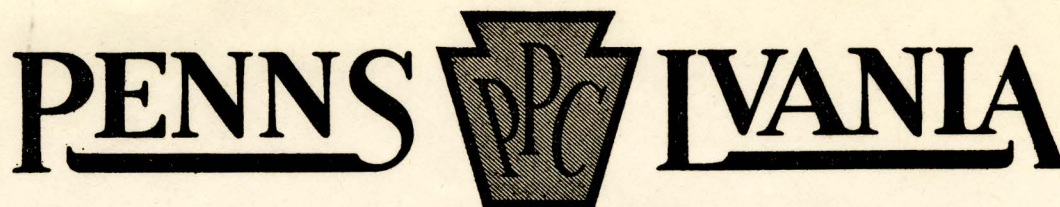
GAP:AEN
Enc.

PENNSYLVANIA PUMP & COMPRESSOR CO.

G. A. Parker

PROPOSAL

from



PENNSYLVANIA PUMP AND COMPRESSOR COMPANY

MAIN OFFICE AND WORKS, EASTON, PA.
21 State Street, New York, N. Y.

Our Ref. NY-1218-36.

February 25, 1936.

TO Island Service Company.Nantucket, Mass.

(hereinafter called the Purchaser). The

Pennsylvania Pump & Compressor Company (hereinafter called the Company) proposes to furnish the Purchaser above specified the machinery covered by this Proposal and by the Detail Specifications hereto attached, as follows:

Two (2) $2\frac{1}{2}$ " Class HHLS single stage, single suction, ball bearing, enclosed impeller type Centrifugal Pumps having $2\frac{1}{2}$ " discharge and 4" suction openings, complete with cast iron casing, bronze impeller and bronze covered steel shaft.

Each Pump will be capable of handling 200 G.P.M. of 60 deg. F. water against 85' total dynamic head, including not more than 15' total suction lift at approximately 3450 R.P.M., with an efficiency of 65% requiring 6.62 B.H.P.

Each Pump will be complete with a $7\frac{1}{2}$ HP, 3450 R.P.M., 220 volt, 3 phase, 60 cycle Louis-Allis ball bearing, squirrel cage Induction Motor, less Starter; all assembled as a self-contained unit, as described in accompanying bulletin #223 and illustrated in sectional view on page 3.

PRICE: Two (2) Pumping Units, complete as detailed above, net F.O.B. our Works, Easton, Pa. - - - - - \$234.00, each.

Approximate shipping weight, each unit - - 360 Lbs.

240.00

All quotations are subject to change without notice.

TERMS OF PAYMENT

Net cash payable in exchange on New York or Philadelphia. Pro rata payments are to apply as shipments are made. If shipments shall be delayed at Purchaser's request payment shall become due and payable on notification by the Company that the machinery provided for by this agreement is ready for shipment.

SHIPMENT

Shipment will be made one (1) week from receipt of order and full information at the Company's works, Easton, Pa., and acceptance of order by an Executive Officer of the Company.

PLEASE USE THIS COPY IN PLACING YOUR ORDER BY SIGNING AND GIVING SHIPPING INSTRUCTIONS IN THE SPACES PROVIDED ON THE LAST PAGE. THIS WILL BE APPRECIATED EVEN IF YOUR ORDER IS ALSO GIVEN ON YOUR OWN ORDER FORM.

March 28, 1936

Dear Bill,

I have entered a verbal order with the Gates Rubber Company for the following drives.

1 drive for the exciter comprising

- 2- No. 68B Gates belts
- 1- 12.4 PD 2 groove sheave
- 1- 6.4 PD 2 groove sheave

center to center dimension 19.8 inches- good for 3.5HP

cost 20.23 dollars

2 drives for the agitators each comprising

- 3 - No. 85A Gates belts
- 1- 3 PD 3 groove A sheaves
- 1- 18 PD 3 groove A sheave

center to center distance 25.5 inches - good for 1.5 HP

each to cost 20.14 dollars.

All sheaves are to be drilled to fit shafts as proscribed in the letter I wrote to the Gates Rubber Company on March 26th.

The total cost of these drives is 60.51 dollars.

These drives will be delivered in one week to you. You can send the order either to me for forwarding or directly to

Mr. A. C. Malthaner
The Gates Rubber Co.
30 Church Street
New York, N. Y.

Things are going off to you in dribblets- Hope to hear from you tomorrow regarding the hoist and crane way. Have you sent me the list of material Wayne bought? I should like to have it checked before I come down to the Island.

Have you had a bid from the Armstrong Cork Co.?

Best regards- see you soon,

Island Service Company

Nantucket, Mass. ~~Feb~~ March 28, 1936

Dear Al.

Enclosed find order for the cold storage doors.

I sent the quotation from Euclid Crane and hoist Co direct to you and you can make the changes . We will want the hoist with the trolley mounted on the top of the I-beams as you recommend for 15.00 more.

We will want the electrical equipment for the 58.00. We will want the wires vertically along the crane ways and horizontally with the crane bridge

Enclosed find print " M -2015 which is the one that we want.

Best Regards,
Bill.

March 30, 1936

Dear O.D.I.

I was as surprised as you to hear of Waine's bill. I was under the impression that Floyd and our crew were handling the electrical work. You seemed to be on to Waine from all you said during the summer and I never anticipated that he would get so much to do on this job. It was also my understanding that Floyd or Mather would supply us with the conduit, wire etc. at cost prices. I called Bill immediately after receiving your letter of the 18th and had a talk with him concerning the matter. I also sent him the enclosed letter to confirm our telephone talk. As yet I have not received a list of the materials which Waine bought.

The mechanical end of the plant is practically finished- The ice house remains to be tackled. Everything is to be ready by the first of May. If we need ice we can certainly make some by the 15th of April. This is in accord with my last information from the Island. I am going down April 3rd and shall give you further details upon my return.

We've had good news from Mother and Dad. They arrived safely and are all set for a grand time. The weather has become very springlike and after the rain and cold this change has been very welcome.

More news in a week- Best regards to you, Bill and Florence and Aunt Florence.

Sincerely,

Island Service Company

Dr. Alfred Bornemann,
525 River St.
Hoboken, N.J.

Nantucket, Mass. Mar. 31, 1936

Dear Al.-

Enclosed find order for Gates Rubber Co. and also enclosed
is Waines bill.

We have not heard from Armstrong Cork as yet.

Best Regards,
Bill.

PENNS IVANIA

PUMP AND COMPRESSOR COMPANY

OF EASTON, PA.

AIR COMPRESSORS VACUUM PUMPS CENTRIFUGAL PUMPS CONDENSERS

NEW YORK OFFICE

BOWLING GREEN 9-3459

ADDRESS REPLY TO

21 STATE STREET

NEW YORK CITY

April 1, 1936.

Island Service Company,
Nantucket, Mass.

Gentlemen:- Attention: Mr. William Donnell, Jr., Secretary.

Subject: Our Order #21416.

Supplementing our letter of March 25th we attach hereto
certified foundation print, HH 11535, covering 2½" Class HHLS
Centrifugal Pump on the above order.

We regret to inform you that Louis-Allis underestimated
their motor production schedule in this particular size, with
the result that when we placed our order with them for the
motors they only had one motor in stock. We have now received
advices from them that the second motor will be shipped from
Milwaukee on April 6th, which figuring about a week for ship-
ment to Easton and mounting will make shipment of both units
about April 13th.

We have one unit ready for shipment now.

Regretting this delay, which was unavoidable, we remain,

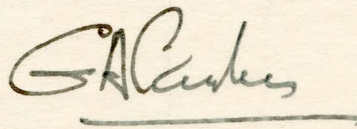
Very truly yours,

GAP:AEN

Enc.

Copy to Dr. Bornemann.

PENNSYLVANIA PUMP & COMPRESSOR CO.



*Telephoned G.A. C. & asked him to
send completed unit straight off & Nantucket*

April 9, 1936

Dear Bill,

Enclosed is a copy of a letter I am sending Collatz regarding the installation of the safety valves in your plant. The general rule which we have followed is that any vessel which might be isolated from the rest of the system should be protected by a safety valve. This means that valves will have to be installed according to the plans we originally made.

As regards the insulation of the ice house ceiling.- Before you seal up the wall between the two ceilings it would be a good thing if the insulation on top of the lower ceiling could be dried out. If you don't do this it will freeze and this will make it little more effective than it is at present.

You can order a type "Q", five tier, tiering machine for four hundred and sixtyseven dollars, f.o.b. Hudson, N. Y. from the Gifford-Wood Company, Graybar Bld'g., Lexington Ave. at 43rd St., New York City, refering to their letter to me dated Feb. 6, 1936.

I have also enclosed a circular on the McKee refrigerator. Moelter is very insistant on its superior quality. He claims that the ice melts down level on the top. Your coolerator does not do this. You will notice that the rear melts faster than the front imparting to the upper surface of the ice a sort of stream lined curve tapering off to the rear. In the ice association literature he has been sending you there is plenty of dope to argue down anyone who sets off trying to prove that the upkeep of an electric refrigerator is cheaper than an ice box. This is the tact I embarked on and I was royally squelched to-day when I tried it on Moelter. The temp. in the McKee is 2 or 3 deg. lower than in the C.

I'll send you dope on the floor and the bill of Waine's next week. I'm off tomorrow on a Geology excursion with thirty boys. Best regards, Any dope you can gather on those other places out Eel Point way would interest me.

Happy Easter-

Normanman.

1 Can Walnuts	x	19
1 lb Butter	x	33
1 doz Eggs	x	10
1 lb Joe Coffee Beans	x	71
12T Shilp	x	12
12t Cream		73
2 PKgs. Rice	x	13
1 doz Oranges	x	59
3 M. String Beans	x	15
1 Cauliflower	x	25
1 Bch Carrots	x	05
1 Pkg. Cream Cheese	x	09
1 Glass. Old English	x	19

\$7.83

10/1/34

Tel. -
Sat. Apr. 11
from Bill

Shears for exciter (gates)

- Pennsylvanina -

- Call Truck -

Bureau.
Sta. Breed.
June.
Printer.
Spill Pao.

Telegram - to Bill Donnell - 4/13/56

Stephen Hall's foreman John King coming down
Wednesday night arrives Thursday -

Brothmann

April 8, 1936

Dear Ossy,

I've mostly good news for you. It seems quite certain that we shall be able to make ice by the first of May. All the ice making equipment was installed with the exception of the water pumps. Since Monday the electrician has been ~~adjusting the motor controls~~ and from the latest telephone reports is just about through. The hoist has been ordered and the candump and can fillers are due this week. The place looks pretty slick- I took some pictures but haven't had time to develop and print any yet. Collatz didn't put in all the safety valves we specified so he will have to change a bit of piping.

Stephen Hall had slipped up on a few minor points concerning the Mass. Insurance regulations but they have taken back all material which was unsatisfactory. They crowded things a bit on the board. This would be serious if repairs had to be made on a live circuit- however you will always be able to shut down for a period of time necessary to repair all trouble that isn't too unusual.

The ice house will be opened up and made into one room but I hardly think that we shall be able to install the conveyor and raise the floor now. This can be done when the house is empty in August without interfering with your regular business. It looks as if the cheapest solution ~~for~~ in regard to the floor is to make a plank one. Fill would require a retaining wall inside of the wooden building walls. The lumber for a plank floor would cost between 250 and 300 dollars. It has to be very strong as the load is 600 lbs per sq. ft.. On this last visit I crawled in to look at the ceilings of the ice house. We found the insulation on the top of the lower ceiling to be soaking wet. Further investigation disclosed that the wall closing off the space between the two ceilings was absolutely uninsulated- which explains a lot. This will be remedied.

Judging from Collatz's reports it seems almost imperative for you to have a vending machine. It is too bad that we do not know more about the number of pieces of different sizes which are in demand. I feel that a two size machine ought to do your job. One piece would weigh 25 lbs. and sell for 15 cents and the other would weigh 50 lbs and sell for a quarter. Without the conveyor you will certainly have to have an extra man in the ice house during the day shift to fill the vending machine and help the delivery men get ice in and out of the ice house.

I'm off to-morrow for a short geology trip with 30 students- I'll send you the pictures as soon as they have been made up. Best regards-

Sincerely,

Island Service Company

Nantucket, Mass.

April 8, 1936

Dear Al,-

I will see that the potential transformers are shipped back for credit. The transformers of 1 KVA capacity should be oil imersed according to Mather and Floyd both.

Bottom of switch panel to floor 24". Starting swt. 13" from floor, running swt. tank $13\frac{1}{2}$ " from floor. Running swt. and starting swt. tank measure 15" overall.

We had the motor running this morning for a while but the large oilswt. started leaking and we have had to shut down and fix that.

They are still checking and to-morrow will put the belts on the compressor and try that out .

Best Regards,
Bill.

X about his switchboard.

April 13, 1936

Dear Bill,

I hope that our luck will change with the weather. I certainly was disappointed to hear of the additional difficulties you had with the switchboard. I must confess that I can not think as quickly as Floyd can talk^X and he completely bowls me over when he starts reciting his troubles. However I am glad that I got Mr. Hall to talk with him. He is quite convinced, as I have been right along, that Floyd knows what he is doing. What is more they seem to be just as disturbed as we over the difficulties we are encountering. They take the blame for any defective material. They will make good on the unsatisfactory items, such as,

- 1- the unacceptable potential transformers
- 2- the defective field discharge resistance
- 3- the damaged kW meter
- 4- the locking mechanism on the start and run switches
- 5- the missing resistance on the one power factor meter or whatever it is that causes it to run hot.
- 6- in this category belongs the position of the oil switches which is so low that the oil cans do not clear the contact members.
- 7- the exciter pulley (which, by the way, I have still to mention to Stephen Hall)

I am doubtful regarding any redress you may expect on the changes in the wiring you had to make in order to conform with the insurance regulations. These are listed below.

- 1- connections between middle of oil switches and potential transformers
- 2- replacement of the connections from the secondaries of the potential transformers which were taped to the frame, with wires running through a conduit.
- 3- The connection from the KW meter which Floyd had to change and which he mentioned in his telephone conversation of Apr. 13.

*note to OOT
not insurance*

The low exciter voltage is nothing to get very excited about, especially as you have not as yet been running under full load. Hall is willing to rewind the relay coil actuating the alarm circuit as soon as you discover what your exciter voltage will be under full load conditions.

The fact that you need time delay relays (the PQ 3 things) to keep your over-load protective device from functioning when you start up the big motor is a circumstance peculiar to your general load conditions and one which I do not believe could have been definitely anticipated.

I spent Monday morning with Stephen Hall going over these points and finally convinced them that they should send down their foreman John Konz, who supervised the assembly of the switchboard, to check over the difficulties we have encountered. As I telegraphed you he leaves here Wednesday night arriving in Nantucket Thursday afternoon. I had quite an argument with Hall regarding who was to pay his expenses and time. The present state of the discussion is that they pay his time and we his expenses. I still do not think that we should be called upon to pay anything after all the trouble and expense we have been put to due to things which have been their fault. But we want John Konz to look over the board and even if it is eventually to cost us twenty-five dollars it will be worth it. The reason why I could not be more definite over the telephone was that Halls first wanted to send down another man who in my opinion would not have been able to give us any more satisfaction than Floyd. I was of the same opinion as you- that is that someone should come down, but, in my case, that someone had narrowed down to one person and that was their foreman. I will be sure to hear his report and I hope that he will be able to adjust your difficulties.

Now I don't know to what extent you can hold Hall responsible for the time Floyd has put in on the board discovering and, to a large extent, rectifying the faults I enumerated on the first page of this letter. Their guaranty states that they "agree to correct---- by repair or replacement any defect in manufacture" which develops during the guaranty period. The items mentioned in the first paragraph of this letter certainly fall into this category. However their guaranty clause goes on to state that they "will not be responsible for any work done or any material furnished on its account without its written authority -----". This latter clause would more or less apply to the time Floyd has put in. The defects were discovered over a period of time so that it was very impractical to wait after every disclosure for written permission from Hall to correct it at their expense. In any case I think it would be advisable for you to get from Floyd a complete written statement of his experiences with the switchboard. He should report, in writing all the defects he discovered and he should, as best he can, allocate the time he spent in rectifying each one. With this in hand we have something to talk with Hall about. Lend him a stenographer in case he can't write as fast as he can talk.

I have written Hall a letter, a copy of which I have enclosed, reporting to them the defects on the board. I have included all I have noted down during our telephone conversations and during my visit to the Island. I trust that I haven't overlooked any. You had better go over the list with Floyd and you can take up with John Konz anything I have missed up on.

I shall send O.D.I. a copy of this letter as well as a copy of the letter to S. Hall & Co.. I apologise for getting excited about the safety valves but you will have to admit that an accident due to non-compliance with the safety code would be criminal negligence and I don't wish any of that chalked up against me. With best regards,

Sincerely,

April 14th, 1936

Dear O.D. I.

Enclosed are the copies of two letters I have written in order to straighten out some of the trouble we have run into, during the last ten days, with regard to the switchboard Stephen Hall made up for us. I shall write you further details as soon as I get a report from them as to the findings of their man. The troubles I have described in the attached letters have cropped out in the course of the last two months but neither Stephen Hall or I were informed of them until the last ten days. Apparently the boys on the Island are just as reluctant to write letters as you or I. I hope that the visit of the foreman from Stephen Hall's shop will suffice to bring order from what - according to my telephonic impressions - resembles the revolt of the machines.

None of the defects reported on the attached letters should have occurred - Stephen Hall are mortified and of course - so am I for I recommended them. I have outlined, in my letter to Bill, the extent to which I believe that they will assume responsibility. Whether or not it would be wise to press them further by legal action - I do not know. You will have to pass judgement on this.

No pictures as yet - I have just returned from my Easter Geologic Expedition and since then have been busy straightening out the tangle referred to above.

You'll hear from me soon again - In the meantime - best regards to all -

April 14, 1936

Dear Bill,

Enclosed is the copy of the letter I wrote to Stephen Hall and which I had promised to send you in the letter I sent off this afternoon.

A couple of things slipped my mind before. First Vogt said that you should receive your can dump and can fillers to-day or to-morrow. Second, the Gates Rubber Co. said that the whole order was sent out April 4th and should have arrived a long time ago at Nantucket. If this order is not complete, wire me and I shall get in touch with them.

Gifford-Wood called me to-day and said that you had ordered the tiering machine. We checked dimensions and they expect that you will have the machine by May first. Did you specify a 3-phase, 60cycle 220 volt machine?

Again let me know if I have missed any tricks in writing to Hall.

Yours,

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

1201-S

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

(15).

R. B. WHITE
PRESIDENT

NEWCOMB CARLTON
CHAIRMAN OF THE BOARD

J. C. WILLEVER
FIRST VICE-PRESIDENT

SYMBOLS

DL = Day Letter

NM = Night Message

NL = Night Letter

LC = Deferred Cable

NLT = Cable Night Letter

Ship Radiogram

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

Received at 46 Newark St., Hoboken, N. J.

NQ58 7=NATUCKET MASS 17 850A

DR ALFRED BORNEMAN=

525 RIVER ST HN=

DISREGARD LETTER EXCITER SHEAVES ARRIVED THIS MORNING=

ISLAND SERVICE CO WILLIAM DONNELL.

1936 APR 17 AM 9 16

THE QUICKEST, SUREST AND SAFEST WAY TO SEND MONEY IS BY TELEGRAPH OR CABLE

Report of Ralph E. Floyd
 Ref: Switchboard from Stephen C. Hall

Item # 1

Repaired two oil tanks on switches due to oil leaks. To let down oil tanks to put oil in for inspection had to throw switches in. Trouble due to oil switches not being raised high enough on switchboard to clear cement floor. (Six hours)

Item # 2

Current transformer on running switch of motor found when inspecting wiring secondary leads pulled out of transformer, took same apart and put back. (one and one half Hrs)

Item # 3

Interlocking devise on starting and running switches do not work as it is at present wrong and starting switches can be thrown in so as each can make contact.

Item # 4

Power factor meter on incoming line and running panels each are same type on incoming line panel power factor. Meter has three resistance on potential coils and running panel. None was supplied, meter running warm, changed the wiring. No resistance on Power Factor Meter on running panel.

Item # 5

Found indicating watt-meter needle sticking. Caused by dial being bent hitting on magnets. (Two hours)

Item # 6

In starting up motor incoming line switch would trip out. Put in P.O. 3 relays to overcome same. (Six hours)

Item # 7

Changed Pot Transformer on incoming line panel and running panel. Found same had improper fuse protection and one not fused. Changed 2300 volt wiring on same panel. Spark coil wire lead being used on primary side of transformer. Wired # 12 5000 R.C. put same in conduit. (Ten hours)

Item # 8

Changed wiring on starting and running switches put same in conduit 5000 V.C. # 4. (Twelve hours)

Item # 9

Found name plate incorrect number on machine serial # 2633188 which is now on machine. On information received from Westinghouse

resistance
 internal OK

seems
 to be OK

over
 adjustment

over adjustment

Report of Ralph E. Floyd
Ref: Switchboard from Stephen C. Hall

Co. actually applies to an induction motor which was built an S.O.
90-A-99

Item # 10

half
Changed connections for counter clockwise rotation on excitor.
Found brushes had not been fitted on commutator, fixed same.
(Five hours)

Item # 11

extra
Found no voltmeter had come with switchboard took same from old
engine panel and installed.

Item # 12

Ans
Found D.C. coils on high and low pressure switches not wound for
proper voltage in testing out same. Found coils would not operate
on any voltage below 86 volts. To excite field of motor for
correction of panel power factor took around 42 volts D.C. this
voltage would not operate D.C. coils. Sent same back to Stephen Hall.
(Three hours)

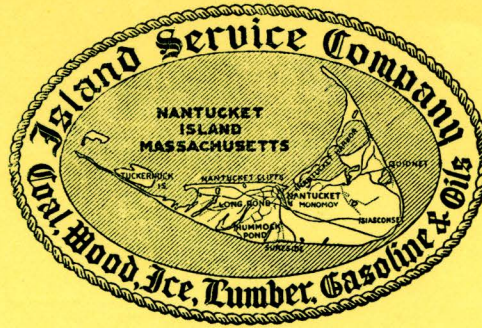
Item # 13

Found discharge resistance for field of motor smoking when running
with contact switches in open position resistance run warm.

(Two hours)

Item #/4

Found 3/8 Bolts which supported discharge resistance
had not been insulated.



Island Service Company, Inc.

Dr. Alfred Bornemann,
525 River St.
Hoboken, N.J.

Nantucket, Mass. April 16, 1936

Dear Al.

Enclosed find report from R.E. Floyd as to what time he has put in on changes.

What has happened to the exciter drives, we have the belts and I wired The American Pulley Co. Phil. yesterday and they had only the order for the agitator drives which we have received. We ordered the exciter drives on the same order with the agitators. We now want the sheaves, one 12.4 PD 2 groove sheave, one 6.4 PD 2 groove sheave center to center dimension 19.8" good for 3.5 H.P. cost 20.23. We have received the bill for the other drives and it is O.K. as per your price of 20.14 each.

We would like the small transformers to go with the electric hoist so that we can get them in place.

The weather here to-day is bright and sunny so perhaps our luck will change. I will write you further just what Mr. Konz reactions are. I don't think that we should have to pay anything after all the trouble we have had on the board.

Best regards,
Bill.

1500 Morada Place
Pasadena. 4/17/36

1997 LAS LUNAS STREET
PASADENA, CALIFORNIA

My dear Al:

Replying to yours of the 8th & 14th. Bill has not had my experience of years with trying to get things right with construction. Therefore he is to be pardoned if he gets peeved and looks the judicial attitude or perhaps better the resignation which comes with experience. My latest advice to him was to eliminate Moeller, pay him bill and charge it to experience. From my own observation as well as from what has been reported to me from Hantucket I long ago have come to the conclusion that he is a flat tire holding a good job because of the notable inefficiency of what is known as "big business". I have met many since I left a professional career for that of business. If the bitter experience of the last five years has not proven the extreme smallness of the minds of those industrial captains who control the means that bring us prosperity it is merely because people in the mass are too lazy to think things thru and use the brains God gave them. The "Brain Trust" of academic minded college professors seem to be equally deficient. The responsibility lies with your generation to lead us out of this fog of half baked ideas. I sincerely hope you can do it. It's a thought to lay before your students. For truth will make us free! If I have managed to convince one teacher of modern youth with my theory I shall consider all our money well spent. I wonder if I have?

I have just returned from an Easter vacation in Death Valley and a trip to Hoover Dam. Since then we have all been quite busy with social events which seem to crowd into this part of the year when the weather is like summer. In fact Pasadena has had several days around 95 degrees. I am planning to come back with Aunt starting the first of May. It will be company for both of us. I will then spend a few days around NY so I can talk things over with you and look up a few old friends that I have neglected for many years. Then a day or so with Sal & Leo at Swans and will hope that the weather at Hantucket has by that time become summery enough so that I will not feel the change too much. I have yet to pack and make the hundred and one arrangements for the children to carry on here until June 20th when they now plan to join me via TWA. It's the first time they have had to run their own affairs so long and also arrange their own trip entirely. We rather hoped to return West by Grace line and to take in the trips which your mother and father took two years ago. Unless something quite important comes up before I get East I do not imagine that I will hear from you again. You never replied to my suggestion regarding the farm at Shavkemo. Something to talk over when we meet again.

Regards to all the family.
Sincerely,

O.D.

April 20, 1936

Dear Ossy,

Enclosed are a couple of pictures to give you an idea as to what some of the machinery looks like in the renovated ice plant. The motor is covered over as it was being dried out.

I talked with Bill last Saturday and he seemed very much encouraged after the visit of Hall's foreman. In fact they seem to be doing so nicely now that Collatz is going to take a few days off.

I received a report from Floyd in which he itemized his time. The report is complete up to Apr. 16 and of the 48 hours he has spent on the switchboard 24 were spent making adjustments we could hardly blame Hall for. The other 24 were spent trouble shooting to disclose the defects I mentioned in the copy of the letter to Hall which I sent you last week.

Spring seems at last to have favored us. We have had the the most goddarn awful weather so far this month. Rain and cold and fog and everything unpleasant. It will be wonderful to actually thaw out.

You can mull over a project I wish to carry out during the first three weeks of September. I would like to spend two weeks in the rockies with Carl, Lilo's sister and maybe Dad. I have no desire to go as far as the coast- I want to stay in the mountains- stop two or three days in one place- do a little climbing, take pictures and then go on. We'll have to talk about it when you come back.

In the the meantime I shall have to be satisfied with the Watchung Range. Best regards to all,

al

April 22, 1936

Dear Bill,

Under separate cover I am sending you a pad of Log Sheets as used by the Knickerbocker Co. We could buy these from them and this would save us the trouble of getting a form printed for our own specific use.

I have also enclosed a bill from Moelter for 75 dollars on account. I would recommend paying this. I had a letter from O.D.I. yesterday in which, amongst other things, he belittled Moelter's contributions to the job we have all been tackling. I think there is a tendency to do him an injustice in this respect. The man has given the Isco, maybe not directly but at least thru me, at least his money's worth. He specified all the mechanical equipment and his experience provided us with the design constants upon which these specifications were based. He made the drawings which have been pretty good guides for the placing and erection of the machinery. You may consider his drawings as being a bit vague in places - but you must remember that every piece of machinery had to fit into a space designed for something else and that we had no accurate drawings of the previously existing lay-out. Collatz's job was according to the general ideas we provided him with. This he has done very well. It would have been folly for us to give him thoroughly dimensioned plans - he would only have had to change things and I believe that requiring him to think things out for himself has saved you time. Otherwise he would have erected according to our specifications and then made changes due to circumstances we neither knew about or could anticipate. Further I am convinced that he has actually been able to save you money in the purchasing of the equipment. One example is the pumps, we were able to get them 10% cheaper because one of the bids was obtained by him from a firm with whom Knickerbocker had good relations. We could have saved you considerable on the compressor parts if you had ordered them thru him and not directly from York. No Bill - in spite of the fact that you may not care for Moelter personally - in all fairness to him you will have to admit that he has earned his money. You mustn't hold the electrical end of the job against him - that was arranged finally, solely between Stephen Hall and myself.

I have looked through Floyd's report more carefully and after talking with John Konz would lay only the following items directly at Hall's door. Items: 1,2,3,9,13,14 - the following items may partially be blamed on them, 7 and 10 - the following items referred to adjustments we would normally be expected to make: 6,8,11,12. This leaves items 4 & 5 which I understand were, more or less, false alarms. The items I first mentioned required 9.5 hr. attention from Floyd and items 7 & 10 - 15 hrs. This doesn't make the situation seem quite so serious.

- 2 -

Now John Konz's expenses were between 30 and 31 dollars these Hall are going to bill you with and against this you have a credit with them of thirty dollars for the transformers you have still to return. Also we shall probably let them make us up the 220 - 110 volt transformer (3-phase) in one unit at an approximate cost of 45 dollars. Small 1 KVA oil transformers are difficult to get- in fact, apparently nonexistent as most people use air transformers for such a small job. This single 3-phase job will be the cheapest and therefore the best for our purpose. I shall order it and you can then confirm the order. They are going to send me prices to-day. If you care to make an adjustment it will probably be most convenient when this final bill is presented to you.

Will you get me, for Dad, an estimate on the cost of sanding the kitchen and pantry floors in the Hussey Street House?

This seems to be all. ~~xxxxxx~~ for the time being, therefore, with best regards,

April 21, 1936

Stephen Hall & Co. Inc.
Seventh & Adams Sts.
Hoboken, N.J.

Gentlemen,-

Enclosed find report from our Mr. Ralph E. Floyd, consisting of fifteen items and hours used in finding the trouble. We feel that after reading this report and talking with your foreman, you will see that we have a just grievance and that there should be some made as to the extra time that Floyd put in.

We were glad that Mr. Konz decided to stay over as he was here when item # 15 was found. The board seems to be in good shape now, but it really should be for all the time we have spent on it.

We would like to hear from you in regards to the above, as to what you feel that you can do towards the extra expense involved.

Very Truly Yours,
Island Service Co.

Secretary.

Island Service Company

Nantucket, Mass. April 21, 1936

Dear Al.-

Enclosed find copy of letter that I have written to Stephen Hall just to start the thing along.

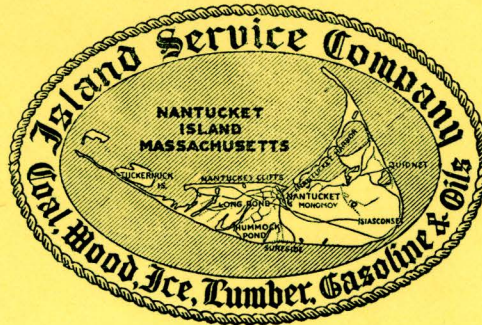
I specified 3 phase, 30 cycle, 220 volts to Gifford-Wood and Have heard from them in regards to this so that is all O.K.

I let Floyd read your letter to Stephen Hall and he couldn't see where you missed anything so that go for me, also.

The man from Mundet is here to-day working on the cork and Gene has gone away for a few days with his wife. I thought it best for him to go now as later on he couldn't be spared.

Best regards,

Bill



150 HP
17 L.P.

233 KW

PH-10
grw. 120

Island Service Company, Inc.

Nantucket, Mass. April 27, 1936

Dr. Alfred Bornemann,
525 River St.
Hoboken, N.J.

Dear Al,-

Enclosed find check for \$75.00 payable to F.J. Moelter.
You had better buy a few pads of the Log sheets enough for a years supply anyway.

I got an estimate or price of \$25.00 for sanding the kitchen and pantry floor by Mr. Taylor. They looked the floor over and decided that the floor had quite a few coats of varnish on it and that it would take considerable time. He also said that he would do it on an hourly basis at 2.10 per hour. ~~and~~ They thought it would take at least 12 hrs to do the job.

Enclosed find blueprint of can dump from Vogt and we can't use this dump here. Do you think that we could return this and get one similar as the enclosed picture, in fact this is the kind we want. We don't need the sprinkler part or the tray.

We ~~had~~ plan to have the can dump come back in a vertical position when the ice leaves the can and then fill the cans from the can filler in this position. You can see from the present dump that we wouldn't be able to do this.

We started the plant up Friday and will have to pull ice to-morrow as we are practically out and Killen hasn't any on hand.

We have tried all morning to get the Vogt dump to work as wanted but apparently it can't be done. What does it mean on the blueprint for distilled water plants only? This is only a question and has no bearing on the kind of dump we need.

We will have to do the best we can with Hall on settlement.

The cork is here and Mudets man left Sat. He has done a good job.

It hasn't been a question of serious errors on the job but it has cost us plenty of time and money and inconvenience. We will have to go right along now to get anyway near finished by the middle of May.

Best regards,
Bill.

Pull up to
vertical with
crane.

3 phase transformer must be
an auto transformer 39.58

put in 15 drums - @ 100 lbs/drum

Island Service Company

Nantucket, Mass.

April 29, 1936

Dear Al.

Enclosed find price of two can dump from York. Fig. 1. is the dump. If Vogt doesn't have one like this, we will have to get it from York. Shipment must be quick as we are waiting.

Best Regards,
Bill.

Island Service Company

Nantucket, Mass.

Sorry, forgot to put this in.

Bill

NANTUCKET GAS & ELECTRIC COMPANY

Ice Manufacturing Primary Service Rate #14

Availability - Available for all purposes where customer provides transformer equipment and for Ice Manufacturing with Synchronous Motor Drive capable of operating at leading power factor of 1.05, where the customer contracts for not less than 40 K. W. of Off Peak Demand, and where the On Peak demand does not exceed one-third of the Off-Peak Demand.

Character of Service - A.C. 2300 V., 60 cycle, three phase

Rate

Demand Charge

On Peak Demand charge at \$2.00 per KW per month, plus Off Peak Demand at \$1.00 per KW per month, but not less than \$40.00 per month.

Plus:

Energy Charge

1.8¢ per KWH 1st 10,000 KWH per month
1.2¢ per KWH Balance of KWH per month

Determination and Measurement of Demand

The On Peak Demand shall be the highest 15 minute integrated demand during the Peak hours on any day during the month, but not less than the highest demand so determined in the immediately preceding eleven months.

The Off Peak Demand shall be the highest 15 minute integrated demand during the month, but not less than the Off Peak Demand contracted for, nor less than three times the On Peak demand, nor less than the highest Off Peak Demand, determined by any of the above methods during the immediately preceding eleven months.

On Peak Hours - Daylight Saving Time

8 P.M. to 10:30 P.M. June 15 to July 31, inclusive
7:30 P.M. to 10:30 P.M. August 1 to September 12, inclusive

Power Factor

The company may at its option, or at request, install a suitable KVA meter and when the ratio of KW/KVA is less than 95% there will be an additional charge of 2% of the particular month's billing, when the ratio of KW/KVA is in excess of 99% there will be a credit against the billing of 2% of that particular month's billing. }

Fuel Clause

For each increase of 3/10¢ in the cost of Fuel Oil in the Company's Tanks over 3.5¢ per gallon, there will be a corresponding increase in price of energy of 1/10¢ per KWH and for each decrease of 3/10¢ in the cost of Fuel Oil under 2.5¢ per gallon, there will be a corresponding decrease in the price of energy of 1/10¢ per KWH.

Minimum Charge - The sum of the demand charges.

NANTUCKET GAS & ELECTRIC COMPANY

Ice Manufacturing Primary Service Rate #11 Continued

Terms of Payment - 1% Cash Discount 10 days, 30 days net

Term of Contract - One Year, and thereafter unless terminated on
30 day's written notice by either party.

Nantucket Gas and Electric Company

NANTUCKET, MASS.

May 6th, 1936

Dr. Alfred Bornemann
Stevens Institute of Technology
Department of Chemistry
Hoboken, New Jersey

Dear Dr. Bornemann:

Yesterday we had an opportunity to obtain an accurate test of the operating conditions that will exist at the Island Service Company under the newly completed electrification, and as the results were somewhat different than the estimated quantities, it is necessary to revise the tentative rate schedule. This revision, however, will not affect materially the overall figures agreed on in my letter of October 1st, 1935.

	<u>Tentative Rate</u>	<u>Revised Rate</u>
Demand Charge	1114.50	1080.00
Energy Charge	2600.00	2646.00
	3714.50	3726.00

*on peak demand
charged for 12 min. instead
of only 3 min. as in
letter of 10/1/35*

We were fortunate in having a coal barge in so that the hoist was in operation and Mr. Donnell had the woodshed working along with the new motor installed on the oil pumps. The Ice Plant was in complete operation except for the hoist and stacker, this giving a combined demand of 55.2 kilowatts over the 15 minute interval. The Crane will have a demand of approximately 1.1 kilowatts and the stacker .75 kilowatts and in addition, the oil pump motor was not under load. Allowing these additional factors, it would appear that the highest demand which will be made will be 60 kilowatts. Our estimate showed 85 kilowatts.

The on-peak load is also affected. With the various auxiliaries of the Ice Plant in operation including the holder unit and small use on the Wharf, this registered 11 kilowatts. There will be during the Summer in addition to this, sign lighting to the extent of 1½ or 2 kilowatts so that the on-peak demand will be 15 kilowatts instead of the estimated 21 kilowatts.

In connection with the energy charge, this has been changed so that the low step will cover our increment cost of production which is slightly more than 1¢.

Another interesting point concerning our estimate of use is that you based the quantity of the electricity to be used on 60 kilowatts per ton of ice. From results already established, this is already down to 53 kilowatts per ton which should show a material saving in your production costs. I hope, therefore, you will be able to build up the yearly output. However, this is in your favor.

Nantucket Gas and Electric Company

NANTUCKET, MASS.

Dr. Alfred Bornemann

Page 2

5/6/36

You will notice additional information has been added to some of the clauses in order to clarify and state specifically the conditions. The fuel clause is attached so that the rate will be available on a contract basis of 5 years which you thought the Island Service Company should have. Our present cost per gallon is 3.1¢. The highest we have paid was 3.5 per gallon and the lowest 2.4.

In addition, there is a small discount allowed for prompt payment which I know the Island Service Company, from previous experience, will get the benefit of.

Would be pleased to have your comments on the above as soon as convenient.

The Rebuilt Plant is certainly a great improvement and looks very well indeed. I think your man, Collatz has done a very fine job. The whole arrangement presents a very good appearance and I trust the results will show up to advantage.

Sincerely yours,

NANTUCKET GAS & ELECTRIC COMPANY

W L Mather

W. L. Mather
Manager

WLM:D
Encl.

May 7, 1936

Dear Bill,

I have been after Vogt, during the last week, to give us some credit on the can dump they delivered to us. As it was a special job- and one they won't be able to get rid of- they are not inclined to take it back.

Geoghan, when I accused him of selling us a piece of junk, told me that he had written Moelter to the effect that in order to make a dump to fit into 41 inches and still dump each can individually we would have to sacrifice ease of dumping. In fact he read me the letter he had written M. in which he said that the dump was incompletely balanced and would require some exertion to turn over. Moelter OK'd this in the belief that it was the best we could do to meet our circumstances. Of course now that you have made a two track slide into the ice house the need for the kind of dump we originally chose has vanished.

Geoghan said that he would sacrifice his commission on this new deal and has offered to sell us the Dumper shown in the accompanying cut for \$95 instead of the list price. I think that this is the best that we can do and I would suggest ordering one from him with the proviso that it fit into a 41 inch space. I have been trying to get the exact width from him but have only, to date, succeeded in obtaining his assurance that it would fit this condition. I have had no opportunity to check this matter with Moelter but if it suits you and Eugene Collatz- it looks all right to me.

I saw O.D.I. yesterday and he looks fine. He'll be down to Nantucket in about a week, I guess?

In the meantime- i.e. until something else turns up- best regards.

May 12, 1936

Mr. W. L. Mather
Nantucket Gas and Electric Company
Nantucket, Mass.

Dear Mr. Mather,

I wish to acknowledge your letter of the 6th of May and wish to apologise for not being able to give it, at this moment, the consideration it deserves. The reason for this is that I have just received the log sheets recording the details of operation in the Isco ice plant for the period April 27th to May 6th and I do not believe that they represent normal operating conditions. I have also, not as yet, had an opportunity to calculate or estimate, from the information available, the probable power we shall require when actually operating under normal conditions. Another consideration is that we have not as yet a full charge of ammonia in the system and as a result the compressor is not working under normal conditions. Therefore it seems to me a little premature to ask us to accept a different rate than the one agreed upon just because our power requirements, under the conditions stated above, do not seem to be up to what you had anticipated.

In regard to this last point we had calculated an approximate requirement of 3000 tons of ice per year times 60 KWH per ton or 180,000 KWH. If we are making a ton of ice with 53 KWH this corresponds with a 16% reduction in our estimated current consumption. In your rate of Oct. 1st we were to contract for "not less than 25 KW" this we are doing. In your letter of Oct. 7th you assured me that "the rate is flexible enough to meet the conditions you have suggested". These conditions were that our yearly power consumption might go down to 100,000 or up to 400,000 KWH. Even if the results of your test are representative of actual operating conditions we are still using a quantity of energy well within the limits I hypothetically set on October 4th.

Why not let us run, for the time being, under the rate of Oct. 1st? When the plant is operating under full load and things are running smoothly we'll study a two weeks record together and then if you feel a change of rate structure is necessary we can talk it over knowing exactly what the situation is.

While you are considering my suggestion I shall collect more data from the plant and go into the matter more thoroughly myself. With best regards,

Very truly yours,

(Alfred

ALEXANDER MACOMBER, PRESIDENT

CHARLES R. PRICHARD, JR., TREASURER

WILLIAM L. MATHER, MANAGER

Nantucket Gas and Electric Company

NANTUCKET, MASS.

May 16, 1936

Dr. Alfred Bornemann
Stevens Institute of Technology
Department of Chemistry
Hoboken, New Jersey

Dear Dr. Bornemann:

Acknowledging your letter of May 12, naturally under the conditions you have stated it would be advisable to carry along until the Plant operates on the full load. However, I discussed this rather carefully with Mr. Collatz and went over our records before writing you on May 6th.

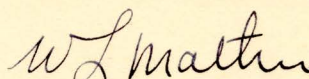
In reference to your second paragraph, my concern is not with the kilowatt hours but with the kilowatts.

Shall be very glad to hear from you when you have your data.

With kindest regards.

Sincerely yours,

NANTUCKET GAS & ELECTRIC COMPANY



W. L. Mather
Manager

WLM:D

Island Service Company

Nantucket, Mass. May 9, 1936

Dear Al,-

Enclosed find order for the two can dump. Be sure that it fits our space. It looks as though it would answer the purpose.

Best Regards,
Bill.

Island Service Company

Nantucket, Mass. May 8, 1936

Dear Al.-

Enclosed find log sheets as per your request. The ammonia pressures will vary as we are not fully charged with ammonia. The electrical consumption will change when we start our regular running 24 hrs. and haul our capacity of ice, at the present time we are just pulling as needed and under handicap.

The electric hoist arrived this morning. Where is the new can dump and transformers. We have the coil hooked up in ice house and house is holding around 30 degrees. We are having some trouble with ~~water~~ water but hope to get that cleared up.

Best Regards,
Bill.

May 12, 1936

Dear Bill,

I have sent over to Henry Vogt the order for the can dumper. I'll hear in a day or two from Geoghan about the delivery. The transformer has been ordered about ten days ago. It is coming here first and as soon as I receive it and reship it I shall drop you a line.

I have enclosed a letter to Mather in answer to the new rate he wishes to have us accept. It is a stall- i.e. the letter- because I need more time and information concerning the operation of the plant before I can really reach a definite decision regarding the matter. The old plan seems to me, off hand, to be the most desirable one for you to work under so at present I am trying to find out why we should accept the new rate. Any light you can shed on the matter will be greatly appreciated.

Regarding ammonia- you need about 4000 (four thousand) pounds, 1,500 is no where near enough. This is calculated by taking 75% of the combined volumes of the brine coolers and liquid receivers.

2 Brine coolers ea. 45 cu.ft.	90 cu. ft.
1 Liquid Receiver	30 cu. ft.
Total	<u>120 cu. ft.</u>

And as ammonia weighs 40 lbs. per cu. ft. the weight of ammonia required is-

$$120 \times \frac{85}{100} \times 40 = 3,600 \text{ lbs.}$$

Moelter said 4,000- I suppose the difference was for good measure. If you put in between 3,600 and 4,000 you'll have enough.

You had better send me weekly the duplizate log sheets- I'll return them to you, after I have finished checking things.

With best regards- Dad will probably be down soon-

Sincerely,

Island Service Company

Nantucket, Mass.

June 4 1936

My dear Al:

I have looked over the situation here in the iceplant and my sympathies are entirely with this end. Your man Collatz seems to be a nice competent man who has labored under great difficulties and solved them well. All these "little things" that you deem so unimportant have added up to a large sum of lost time and inefficient effort so that after all these months we are not yet finished and are working along at a great disadvantage. As soon as the can dump arrives and if it proves to be capable of doing the work we can get going.

The correspondence with Stephen Hall speaks for itself. How ~~the~~ those people had the nerve to send out such junk and then dun us for a small balance is beyond me. It is just another example of the big city fellow who thinks that anyone who criticizes his goods is balmy. On his own admission over the phone he had just one competent man in his whole shop and I swear that no competent man ever worked on that switch board. We are saving the innards of the meter to show you. When a firm as successful as the ISCo has not the right to kick when they are stung things are getting to a pretty pass. Even the Government could do no worse and that, in my mind, is the limit. No wonder Business is getting such a panning.

Otherwise things go along, the wind blows as usual, we have no rain and I am very comfortable in your apartment at 11 Hussey. *W.D.*

Island Service Company

Nantucket, Mass.

May 21, 1936

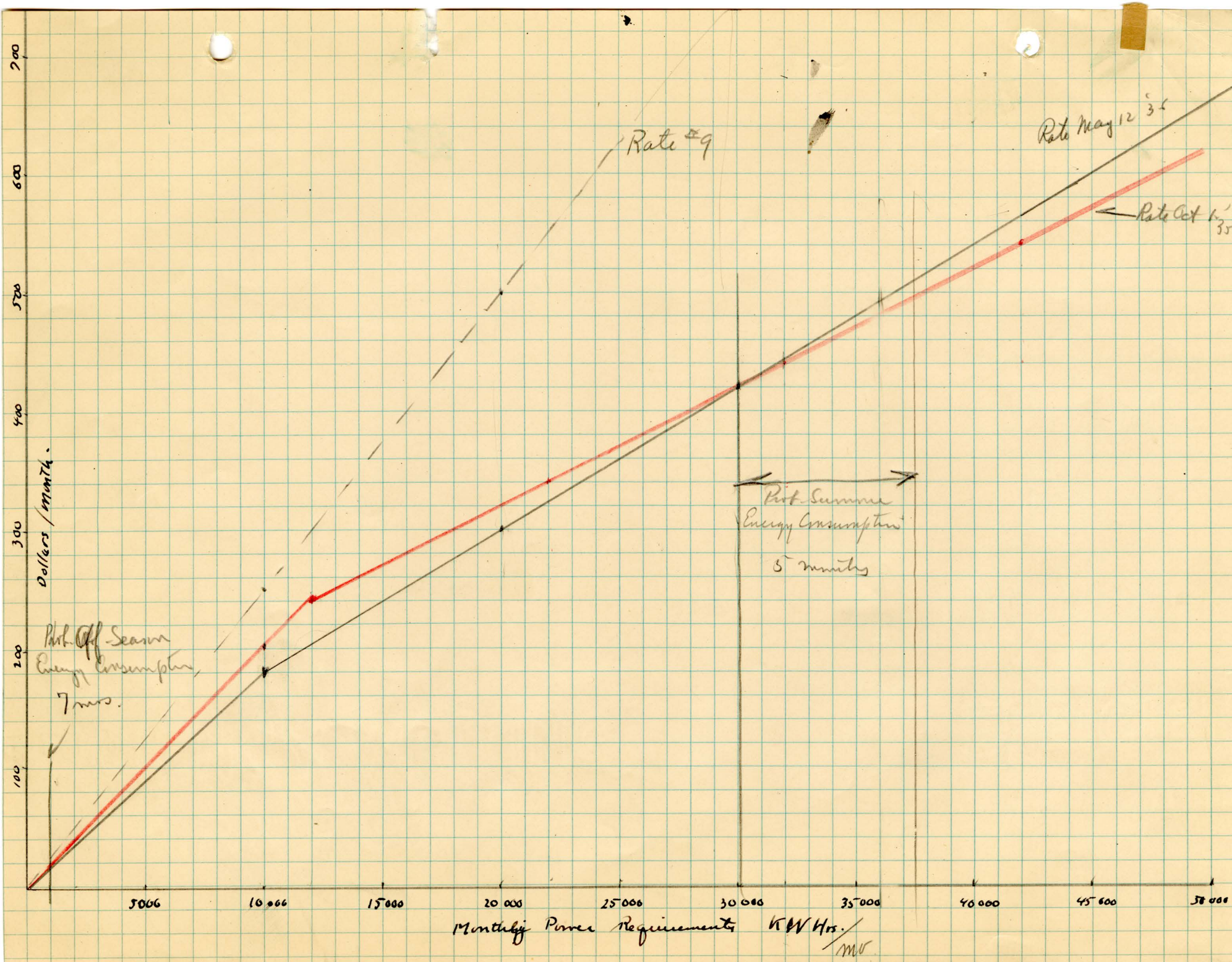
Dear Al.-

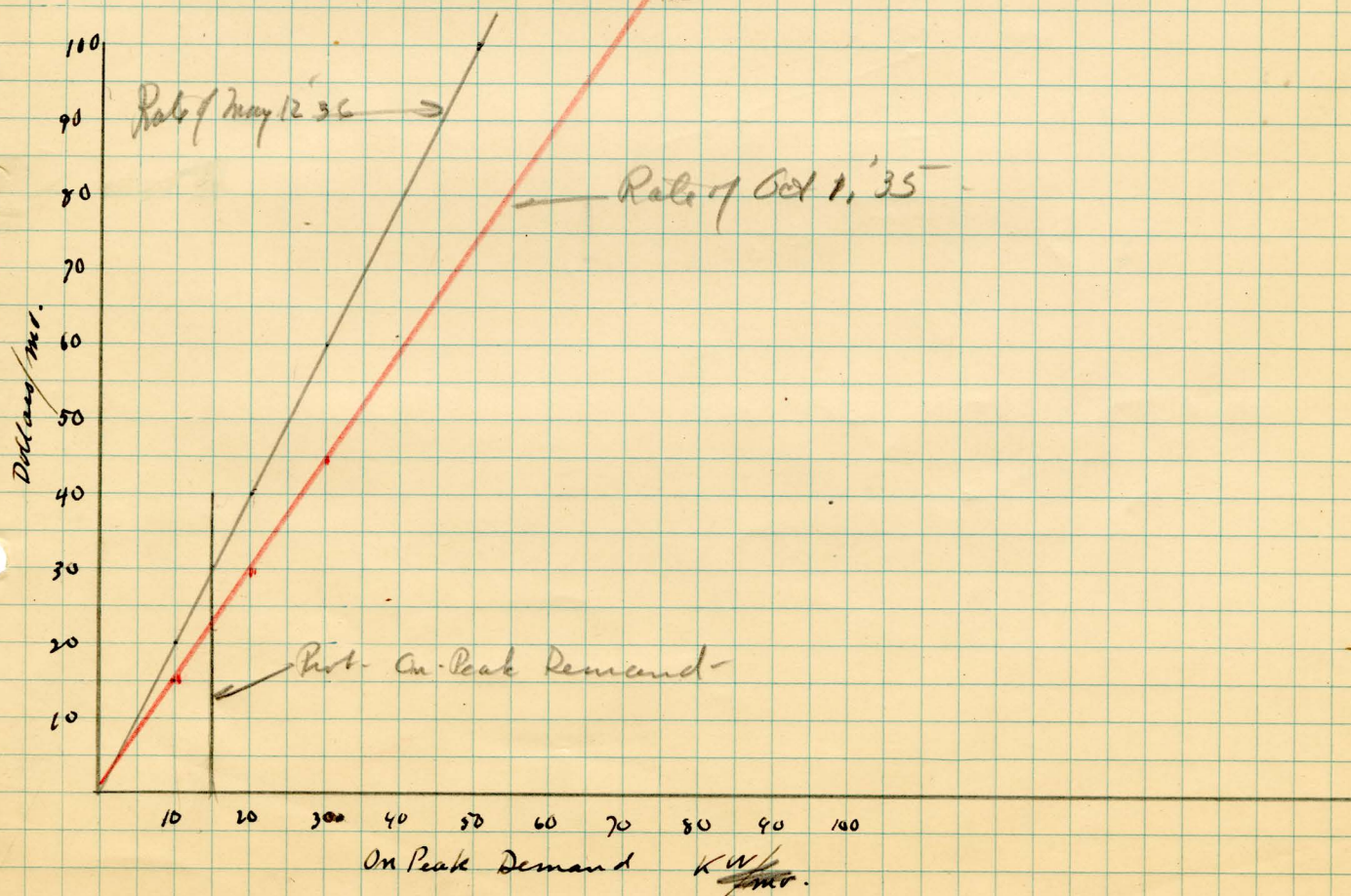
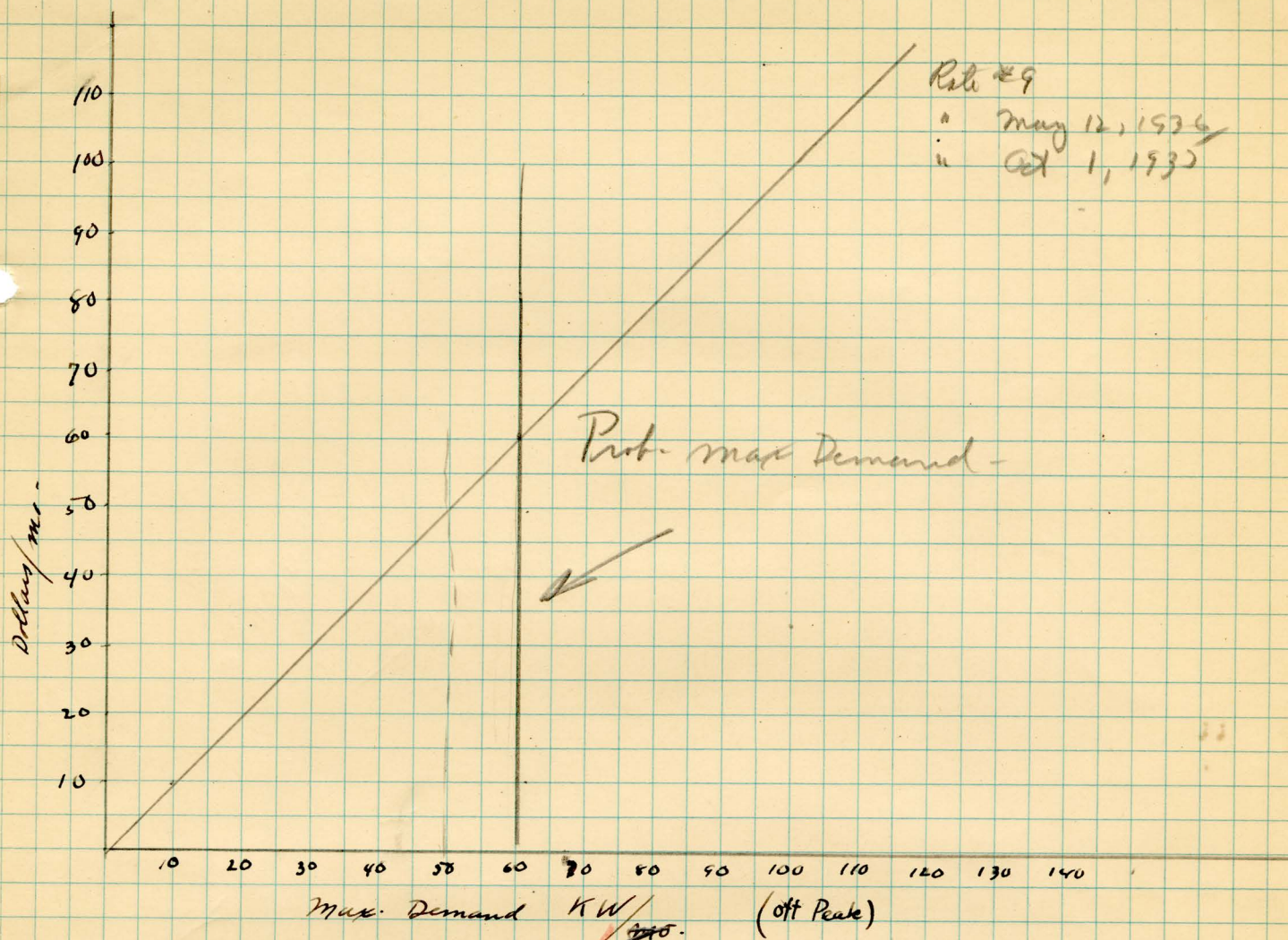
We will probably receive the transformer to-day and am glad that the can dump is on the way. We have put 22 drums ~~xxx~~ ammonia in the system so far. The pressures are holding all right but as we put in more ammonia the back pressure is a little higher. We sent the log for last week to you on May 19th. We have not added anydichromate to the brine and the brine that you have is just the calciumchloride and water. We will have to let the rate ride until we can run our regular 24 hr. shifts for awhile. I don't believe that we can tell very much from the way we are running.

Everything seems to be going along O.K. although I had to ship the watt meter to Boston for repairs as the dial hand fell off. The ice looks very good so far and should improve as we go along. The Ice house feels like areal storage house as the air is dry and cold.

What has happened to that bill of Waines that you were going to check up.

Best Regards,
Bill.





June 14, 1936

Dear Ossy,

I've enclosed your correspondence with Halls and I don't blame you for feeling the way you do about the whole matter. I am anxious to see the wattmeter. This was one of the items about which there was some question at the time Konz looked at the board. For some reason or other it was decided not to send it back with him but they (i.e. Halls) offered to repair it, at no expense to us, if it eventually proved to be unsatisfactory. This I was told verbally and I was under the impression that you people, if you didn't have it in writing from Hall, at least understood it.

Has the can-dump arrived? I was told that it was shipped the 21st of May and upon learning that you had not as yet received it, I notified Vogt and they have put a tracer on the job.

The next item is the new rate Mather would like to have us accept. I have enclosed two graphs to show you the difference between the rates. The black full line represents the new rate and the red line the rate of October 1st, which we originally accepted. The monthly charge is made up, in the new rate, by adding the two demand charges to the energy charge. Note that you pay the two demand charges twelve months of the year. In the old rate the charge (i.e. total charge) was made up in the same fashion only the "On-peak Demand Charge" was only made during the three summer months when we were supposed to shut down in the evenings. This additional charge amounts to 9×30 or 270 dollars and it represents the major difference between the two rates. He has also increased the max. demand from 25 KW to 40 KW. This ought not to affect us unless the business goes all to hell. The only reason, I can think of, for his wishing to do this is to freeze out other applicants from similar consideration. This would work to our advantage. Maybe you can make a compromise with him. Accept the new rate if he'll restrict the "On-peak Demand Charge" to the three months during which we have to shut down the compressor in the evenings. This would be in accord with the proposition he made up on October first, last year. The old rate gives us the greater latitude, is also more favorable if we can expand our business appreciably. This will be evident to you from a perusal of the ENERGY CHARGE PLOT. If Mather has been too generous with his first proposition (find that out if you can) and it appears politic to accept his new proposition, my advise is to try and get the concession on the "On-peak Demand Charge" which I've suggested above.

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I have had, to date, expenses amounting to about 350 dollars on this job. This sum includes electrical equipment I purchased for the Isco as follows;

Motors, Bases and switches	135.38
Transformer	35.08

I have received 300 from you in anticipation of the aforementioned expenses and I would appreciate reimbursement for the rest some time in the near future. If you wish an itemised statement I shall supply it.

From the plant log of the last 12 days, things seem to be going along quite well. By putting in more ammonia I think you'll pull down your head pressure and increase your back pressure so that your operation will be even more efficient than it is at present. I'm sending the log sheets over to Moelter for his remarks.

I've been feeling pretty low during the last three weeks due to the after effects from the removal of an impacted wisdom tooth. So I've been doing no more than I had to over at the lab. I'll get to your water analysis this week and then forward instruction regarding the doping of the brine with Dichromate.

I am also getting together some more information on vending machines which I hope to be able to send you ~~xxxxxxx~~ in a day or two. Have you any idea how many 25 and 50 lb. cakes you sell during a day?

Are the water pumps working satisfactorily? Parker called me recently and said that he had received an S.O.S. from you and wanted to know if everything was O.K. again.

Best regards- I'll be down the 27th.

Sincerely,



Island Service Company, Inc.

Nantucket, Mass.

June 20, 1936

Dear Al.-

In reference to your letter of June 14th to Mr. Ingall.

The repairs to wattmeter cost us 25.80 and when you arrive here I have a letter from the firm that repaired it explaining the condition it was in and the reason for the high charge.

The can dump has arrived and is in operation.

In reference to the electric rate we can take that up with Mather when you get down here as to be perfectly frank I don't quite understand it.

The plant is running along smoothly and we haven't started to push them as yet so we have plenty of ice.

I am sorry but we have no records of how many 25 and 50 lb pcs sold at the platform but we will know from now on as we are keeping a record of platform sales. We had a record for last year but we added up the lbs sold and didn't keep the record of the various sizes.

The water pumps are working O.K. now as we drove two more wells which brought the capacity from 50 gallons per minute up to 100 gals. per min. At first they were not getting the water and we had a vacuum of 25 ft but that is cut down now. ~~THE WELL WATER IS ABOUT 52 DEGREES TEMP.~~ The well water is about 52 degrees temp.

We will be glad to get the water analysis as Collatz has inquired about it several times.

Enclosed find check for 50.00 on acct.

I am sorry to hear about your tooth and hope you are feeling much better now,.

Best Regards,
Bill.

September 23, 1936

Dear Bill,

I have just received a telephone call from Kehoe's office and they have asked me to inquire of you as to what your intentions regarding the Ingersol-Rand compressor were. They say that you were sent a contract form, on Aug. 28th, which if filled out properly by both parties gave them a sort of agent's right to go ahead and dispose of your compressor for you. If you are desirous of having Kehoe handle the sale of this unit they would appreciate your sending them this contract as they are writing up their new advertisement sheets now and would like to include your compressor.

We are busy as can be around here at present. We have nearly 50 more in school this fall than last year at this time. The weather is muggy as hell- How I long for the Nantucket breezes.

Sorry not to have bid you an official goodby but the hurricane got us all upset- dashing from one shore to the other in quest of some real waves. Remember me to all in the office, with best regards,

Very truly yours,